IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

STUDENTS FOR FAIR ADMISSIONS,
INC.,

        Plaintiff,

    v.

UNIVERSITY OF NORTH CAROLINA, et
al.,

        Defendants.

Civil Action No. 1:14-cv-954-LCB-JLW

PLAINTIFF'S PROPOSED
FINDINGS OF FACT AND CONCLUSIONS OF LAW

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PROPOSED FINDINGS OF FACTS

I.   The Parties

1.   Students for Fair Admissions, Inc. ("SFFA") is a non-profit organization whose mission is "to defend human and civil rights secured by law, including the right of individuals to equal protection under the law, through litigation and any other lawful means." PX106, UNC0000059; J. Stipulation ¶1.

2.   SFFA is a voluntary membership association with more than 20,000 members—including applicants and prospective applicants to institutions of higher education. *Id.* at UNC0000052; J. Stipulation ¶1.

3.   SFFA has members who have applied to UNC, who were denied admission through a system that considers race and ethnicity, and who are ready and able to apply to transfer to UNC if it ceases its discriminatory practices. J. Stipulation ¶1.

4.   UNC is a flagship public research university located in Chapel Hill, North Carolina. EX2. UNC's Chancellor is Carol Folt, and its Provost is Robert Blouin, who replaced James Dean in 2017. Folt Dep. 12-:17-13:19; Tr. 513:21-25 (Farmer). Together they oversee UNC's academic activities, including admissions. Folt Dep. 15:5-14.

5.   The Office of Undergraduate Admissions ("Admissions Office") makes UNC's admissions decisions. The Vice Provost for Enrollment and Undergraduate Admissions is Stephen Farmer, and the Senior Associate Director of Admissions is Jared Rosenberg, who replaced Barbara Polk in 2017. Tr. 508:7-10, 611:18-20, 639:18-640:1 (Farmer); Tr. 675:9-13 (Rosenberg). Together they oversee all aspects of the Admissions Office. Tr. 511:24-512:20 (Farmer); Tr. 678:8-679:1 (Rosenberg).

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II. UNC's Admissions Process

A. In-State and Out-of-State Applicant Pools

6.   Pursuant to UNC Board of Governors' Policy 700.1.3, out-of-state applicants cannot comprise more than eighteen percent of each newly enrolled class. J. Stipulation ¶ 38. If UNC exceeds this cap, the Board of Governors can reduce its operating budget the following year. *Id.* ¶ 39.

7.   UNC receives applications from approximately twice as many out-of-state students than it receives from in-state students. *Id.* ¶ 40. For the 2016-21 classes, UNC received 65,123 applications from North Carolina residents. J. Stipulation ¶100. By contrast, 135,289 non-residents applied to UNC over the same period. J. Stipulation ¶100.

8.   With less than one-fifth of the seats and yet twice as many applicants, the admissions process is far more competitive for out-of-state applicants than for in-state applicants.

9.   UNC officials are aware of this disparity. Tr. 698:5-24 (Rosenberg) (describing a more stringent second-read process for out-of-state provisional admits than for in-state provisional admits); Tr. 729:24-731:9 (Davis) (acknowledging that UNC employs a higher standardized test score threshold for recruitment of out-of-state students than for in-state students); Tr. 519:22-520:4 (Farmer) ("[W]e have fewer spaces for out-of-state residents with many more candidates from out of state, though.").

B. UNC's Rating of Applicants

10.   UNC rates applicants based on the following metrics: (1) the strength of the applicant's high school program; (2) the applicant's academic performance; (3) the

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applicant's extracurricular activities; (4) the applicant's personal qualities; and (5) the applicant's essay.[1] J. Stipulation ¶ 47; PX109, UN0323608-09; Perkins Dep. 40:3-43:10; PX003, Interrogatory 26.

11.   The readers record those ratings on a "summary sheet" or "dashboard" included in the applicant's file on UNC's database. Perkins Dep. 37:19-38:19, 44:25-45:8; Tr. 699:10-24 (Rosenberg).

12.   Each year, UNC issues a "reading document" that sets forth guidelines for the assignment of these ratings. PX108, UNC0000010; PX109, UNC0323603; J. Stipulation ¶45.

13.   The reading document—and the training admissions officers receive on it—are designed to ensure that admissions decisions are properly "calibrated" to UNC's criteria. Tr. 707:20-23 (Rosenberg); *see also* PX070, UNC0179483 (training new reviewers will "increase [UNC's] calibration").

14.   UNC readers evaluate applicants on more than forty criteria, grouped into eight broad categories: academic performance, academic program, standardized testing, extracurricular activity, special talent, essay criteria, background, and personal criteria. J. Stipulation ¶46.

15.   Readers assign formal ratings for five criteria categories: (1) academic program; (2) academic performance; (3) extracurricular activity; (4) personal qualities; and (5) essay. J. Stipulation ¶47.

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[1] UNC stopped formally rating applicants' essays after discovery closed in this case. Tr. 71:22-12 (Kretchmar).

16.   The remaining categories—the applicant's background, standardized test scores, and special talents—are ostensibly treated as additional metrics that readers take into account when making admissions decisions. Tr. 714:23-715:20 (Rosenberg); Sealed Tr. 25:4-26:15 (Rosenberg).

17.   The Class of 2017 criteria for applicants' program ratings were:

> •   **Academic program criteria**: rigor, breadth, and pattern of courses taken, all viewed within the context of the entire applicant pool, and the student's high school and any previously attended post-secondary institutions.

PX109, UNC0323608.

18.   The academic performance rating is primarily driven by applicants' high-school grades, with a particular emphasis on the trends and patterns in an applicant's course grades and his or her grades in particular courses. Tr. 715:1-10 (Rosenberg). The Class of 2017 criteria for applicants' academic performance ratings were:

> •   **Academic performance criteria**: grade-point average, rank in class, individual grades, trends in grades, and patterns in grades, all viewed within the contexts of the entire applicant pool and the student's high school and any previously attended post-secondary institutions.

PX109, UNC0323608.

19.   The Class of 2017 criteria for applicants' extracurricular ratings were:

> •   **Extracurricular activity criteria**: engagement outside the classroom; persistence of commitment; demonstrated capacity for leadership; contributions to family, school, and community; work history; unique or unusual interests.

PX109, UNC0323608.

20.   The Class of 2017 criteria for applicants' personal qualities ratings were:

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> • **Personal criteria**: curiosity; kindness; creativity; honesty and integrity; motivation; character; impact on community; exceptional achievement in-or-out of the classroom; history of overcoming obstacles or setbacks; openness to new cultures and new or opposing ideas; talent for building bridges across divisions in school or community or among individuals from different backgrounds.

PX109, UNC0323609.

21.   The Class of 2017 criteria for applicants' essay ratings were:

> • **Essay criteria**: idea, organization, voice, vocabulary, sentence structure and grammar; evidence of self-knowledge and reflection; insightfulness; unique or unusual perspectives.

PX109, UNC0323609.

C. UNC's Use of Race in Admissions

22.   UNC makes admissions decisions based, in part, on the applicant's race. PX003, Interrogatory 27; Tr. 542:10-543:6, 642:7-13 (Farmer).

23.   An applicant's race can be a "'plus' that is awarded" and "may be significant in an individual case and tip the balance towards the admission of the student." PX109, UNC0323610; Polk Dep. 42:7-15; Tr. 549:9-17 (Farmer); PX085, UNC0209654. UNC considers the applicant's race at every stage of the process, PX109, UNC0323609; Tr. 75:25-77:16 (Kretchmar); Tr. 543:7-13 (Farmer) ("[Race] may be used at every point along the way in the decisions we make."), and does not use race as a factor only when filling the last few seats in the class, PX004, Admission 5.

24.   Indeed, race can affect every one of the ratings UNC assigns. Tr. 76:4-7 (Kretchmar); Tr. 543:7-13 (Farmer). UNC considers race even when the application gives no indication that race affected the student's life in any way. Dean Dep. 93:2-9.

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25.   UNC uses race in admissions to increase the admission of "underrepresented minorities" or "URMs." Tr. 68:2-23 (Kretchmar). URMs are African Americans, Hispanics, Native Americans/Hawaiians, and Pacific Islanders. PX035, UNC026473; Tr. 544:25-545:3 (Farmer); DX054, UNC0380502. They are "underrepresented," according to UNC, because the "percentage [of their race] enroll[ed] within the undergraduate student body is lower than their percentage within the general population in North Carolina." PX109, UNC0323609.

26.   UNC does not consider Asian Americans to be "underrepresented minorities." Tr. 68:24-69:9 (Kretchmar); Tr. 544:22-545:3 (Farmer).

27.   Although Asian Americans comprise numerous ethnicities, UNC views them as "majority" students. Parrish Dep. 240:11-241:8.

28.   UNC holds Asian-American applicants to a higher academic standard than URMs. Parish Dep. 207:4-24; PX084, UNC0224142-43.

29.   UNC considers URMs to be "priority groups," PX073, UNC0103716; PX069, UNC0079824; Parish Dep. 31:22-24, and gives preferences to these "priority populations," Tr. 731:12-13, because they "enhance diversity," PX021, UNC0147852; Perkins Dep. 41:10-17.

30.   UNC closely monitors its admission of URMs along a variety of metrics, including year-to-year, PX058, UNC0081617-18, by comparison to UNC's peer universities, PX059, UNC0082912; PX060, UNC0082952, and in relation to the North Carolina and U.S. populations as a whole, PX101, UNC0079512.

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D. UNC's Preferences for Legacy and Disadvantaged Applicants

31.   UNC claims to prioritize applicants from lower socioeconomic backgrounds. According to UNC, the "University works strongly to attract disadvantaged students regardless of race." PX109, UNC032610. It claims that, "as part of its broad effort to foster diversity within the scholarly community on campus, the University's admissions process takes into account the socioeconomic status of each candidate, with an eye towards increasing the number of disadvantages students who are admitted and eventually enroll." *Id.* UNC's actions belie its rhetoric. Indeed, Farmer himself admitted that UNC is "not as good as [he] wished it to be with respect to admitting and enrolling disadvantaged students." Tr. 644:20-23 (Farmer).

32.   Despite this admission, UNC tracks the composition of admitted classes by gender, residency, citizenship, legacy status, and (at least until this case was filed) race—but not socioeconomic status. Tr. 88:22-89:14 (Kretchmar).

33.   UNC claims that it gives only a minor preference to out-of-state legacy students and no preference at all to in-state legacy students. Tr. 557:11-13 (Farmer) (legacy is "one factor among many for nonresident applicants only").

34.   UNC's own evidence, however, contradicts its claim that it affords no preference to in-state legacy applicants. According to a UNC internal study, UNC acknowledged having afforded preferential treatment to in-state legacy applicants from 2011 until around the time this case was filed. PX301, UNC 0083310; PX302, UNC019622 (UNC's "bias is creeping in" to in-state legacy decisions). The statistical evidence in this case further contradicts UNC's claims with regard to legacy applicants.

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E. UNC's Failure to Define, Understand, and Pursue Critical Mass

35.   UNC claims that it admits students based, in part, on their racial background because it wants to obtain the "educational benefits of diversity." Tr. 68:2-17 (Kretchmar); PX003, Interrogatory 27.

36.   UNC states it can secure these benefits by enrolling a "critical mass" of URMs. Tr. 64:2-19 (Kretchmar); Tr. 544:2-19, 661:5-10 (Farmer); PX116, 16-17.

37.   Yet admissions officers and senior UNC officials never discuss the concept of "critical mass." Dean Dep. 144:22-145:5 ("In all my conversations with Steve Farmer, that phrase [critical mass] has never come up. ... [N]o one has directed anybody to achieve a critical mass, and I'm not even sure we would know what it is."); Dean Dep. 167:24-168:4 (critical mass does not "driv[e] the conversation about when race is used and why it is used"); Tr. 110:11-112:4 (Kretchmar) ("have not had a discussion about" critical mass in her more than a decade in the Admissions Office or in numerous race-neutral-alternatives committee meetings); Tr. 659:4-18 (Farmer) ("not aware of any discussions at UNC … about what a numerical threshold might be for critical mass); Tr. 751:8-15 (Davis) ("haven't had any discussions with anyone in the admissions office about what critical mass means"); Coleman Dep. 175:9-20 (critical mass was not "a term that was used in the admissions office" and she "never got any guidance" about it); Perkins Dep. 247:22-248:24.

38.   UNC has never determined whether it has achieved critical mass, Tr. 659:19-660:1 (Farmer); Folt Dep. 122:2-9; Alexander Dep. 93:9-18; Clayton Dep. 42:23-43:7; Williford Dep. 105:2-19, 193:16-25, and has no idea whether its current level of racial

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diversity achieves its diversity goals, Dean Dep. 126:10-19, 131:1-12; Tr. 867:17-869:12 (Panter).

39.   Unsurprisingly, then, UNC has no definition or coherent understanding of "critical mass." Tr. 660:21-25 (Farmer) ("no definition of critical mass was ever formulated by" UNC's Committee on Race Neutral Alternatives); Tr. 661:14-18 (Farmer) (admitting that he "did not even believe the Committee on Race-Neutral Strategies, which was formed after this litigation began, was working on a definition of critical mass").

40.   Some officials say that the measurement of critical mass is "part quantitative or numbers," Tr. 867:22-24 (Panter), and that the number of URMs in the admitted class is "important" to that assessment. Tr. 659:7-12. (Farmer). *See also* Kretchmar Dep. 169:8-24.

41.   Others believe that numbers are irrelevant and what matters is how individual students feel. Tr. 867:25-869:12 (Panter) ("unable" to say "whether UNC would be sufficiently racially diverse if all of the major racial groups were at equilibrium and had the same share of the campus population"); Tr. 109:23-110:10 (Kretchmar) ("[W]e think of critical mass in terms of its outcomes, and I think one of the ways that we try to determine if we've achieved it is by asking our students whether we've created the environment for them that they say they want."); Tr. 567:18-568:1 (Farmer) ("I think critical mass has to be assessed not exclusively in terms of numbers but really in the lived experience of our students."); Alexander Dep. 80:10-13 (critical mass "is about how individuals in the unit feel, their sense of welcoming of presence, of ability to flourish, to see people like them succeed"); Clayton Dep. 36:20-24 (critical mass is "very amorphous…. [T]hat really is the

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point at which individuals who are a part of any underrepresented population begin to … feel like an individual.").

42.   Others point to more esoteric considerations. Faison Dep. 297:24-307:21 (critical mass is a consideration of the "representation [of the race] among administrators, faculty, and staff," "visibility of issues or individuals," the level of "racial identity development," such as whether a Latino student is actually "go[ing] out and protest[ing] for Latino issues," whether there are "allies and champions" for the racial group, and whether there is "intersectional identity" within the racial group). Others believe critical mass cannot be measured. Clayton Dep. 52:11-53:2 ("Because critical mass is amorphous, you know, there – there is really not a way to make the determination.").

43.   And others lack any conception of the term at all. Polk Dep. 256:1-12 ("I don't think that we actually know…. [T]here's no concrete definition. There's nothing that says when you get to X you will have reached critical mass."); Tr. 722:5-11 (Rosenberg) (acknowledging he lacks "an understanding of how to measure critical mass"); Folt Dep. 129:18-24 ("I don't find that term [critical mass] very useful because I don't know what that means."); Parrish Dep. 21:22-25 ("I don't really understand what [critical mass] is."); Tr. 751:8-10 (Davis) (acknowledging he is "not really familiar with what [critical mass] means"). Coleman Dep. 175:9-20.

III.   UNC's Admissions Process

A. Pre-Application Recruiting

44.   Each year, the Admissions Office purchases the contact information of more than 75,000 high school students who have taken standardized tests. PX064, UNC0087530.

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45.   The goal is to identify "admissible" prospects and "encourage them to" apply, Tr. 746:3-15, 726:22-727:2 (Davis), and allow UNC to "ultimately yield [its] targeted populations." PX097, UNC0186917.

46.   These students are sent promotional materials encouraging them to visit and to apply to UNC. PX064, UNC0087530. This "strategy" is part of UNC's "priority of recruiting top North Carolinians and students who strengthen diversity." *Id.*

47.   In identifying these students, the Admissions Office requires some racial groups to perform better on standardized tests than others in order to be deemed admissible (and therefore recruited). In 2014, for example, URMs in North Carolina could score as low as a 26 on the ACT and be recruited, whereas white and Asian-American students needed at least a 29. PX064, UNC0087530.

48.   UNC imposes similar racial test-score thresholds when it holds recruiting events. PX097, UNC0186917; Tr. 750:7-751:7 (Davis); 228:10-14; PX097, UNC0186917; Parrish Dep. 118:1-121:3*;* PX096, UNC0186754.

49.   UNC imposes these racial cutoffs because it does not want to "purchas[e] names that we know for a fact would not be admissible." Tr. 748:9-13 (Davis).

50.   After this litigation began, UNC ceased using racial thresholds when purchasing names to recruit students. Tr. 749:6-21 (Davis).

B. The Application

51.   To apply, a student must submit an application, academic transcript, standardized test scores, personal essays, and letters of recommendation. PX002, Interrogatory 4.

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52.   Students can apply through "early action" (applications due in October; decisions in January) or "regular action" (applications due in January; decisions in March). Tr. 535:16-22 (Farmer).

53.   UNC's application (the Common Application) contains a "Demographics" section that requests the applicant's citizenship status, birthplace, and race, and a "Family" section that requests the applicant's parents' country of birth. J. Stipulation ¶36; PX113, UNC0098996-97.

54.   As noted above, UNC faces financial penalties unless it limits the proportion of out-of-state students in the entering first-year class to no more than 18%. Tr. 85:2-5 (Kretchmar); Tr. 519:22-520:2 (Farmer). Thus, in-state students must comprise at least 82% of the class.

C. Reader Review

1.   Reviewing and Scoring Applications

55.   UNC characterizes its admission process as "holistic." DX010, UNC0323607 ("Reading Document"); Tr. 856:7-857:4 (Panter); Tr. 690:11-18 (Rosenberg).

56.   Applications are randomly assigned to and read electronically by at least one admissions official. PX109, UNC0323607; Tr. 691:24-692:3 (Rosenberg).

57.   Each application has a "dashboard" or "summary sheet" which contains basic information about the applicant and prominently identifies the applicant's race. Tr. 691:24-692:8 (Rosenberg).

58.   As noted above, UNC readers evaluate applicants on more than forty criteria, grouped into eight broad categories. J. Stipulation ¶46.

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59. After assigning ratings for applicant's academic program, academic performance, extracurricular activities, personal qualities, and essay, admissions officers consider the applicant's "background and personal circumstances," standardized test scores, and special talents. Tr. 715:24-717:7 (Rosenberg); Tr. 26:16-27:8 (sealed transcript).

60. After evaluating more than 40 criteria, assigning the five ratings, and considering these additional criteria, a reader makes a tentative or provisional decision on the applicant and then must justify that decision with a written explanation. Tr. 713:21-717:11 (Rosenberg).

61. That explanation must "summarize some of the … strengths [and] weaknesses, considering context and any other information [the reader has] learned" to explain the provisional admissions decision. Tr. 717:15-20 (Rosenberg).

62. Readers are required to undertake this process for "every single application"—there are "no shortcuts for particular applications." Tr. 717:24-718:1 (Rosenberg).

63. According to UNC, this entire process is undertaken with care, and each applicant is viewed as an individual and evaluated in the context of his or her own background and life circumstances. Tr. 716:21-717:3 (Rosenberg); DX010, UNC0323609.

64. In reality, however, reviews are necessarily swift, mechanical, and impersonal. UNC sets weekly quotas to ensure that its readers review applications quickly enough to complete the review of 40,000 applications within six months. Tr. 718:16-719:18 (Rosenberg). This necessitates fast review of each application. Even though applications can be more than thirty pages long, Tr. 711:2-10 (Rosenberg) ("There's a lot of information in there to digest."), UNC reviewers complete six per hour—one every ten minutes. 720:11-

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721:14 (Rosenberg); PX070, UNC0179479 ("Readers have previously suggested that they could complete approximately six reads per hour.").

65. Even after UNC stopped assigning a second reader to every application (which purportedly afforded readers more time), UNC still expects admissions officers to spend just twelve minutes on each application. Tr. 719:24-721:22 (Rosenberg).

66. Readers typically spend 2-4 minutes reading an applicant's essay, Tr. 713:7-10 (Rosenberg), and anywhere from thirty seconds to four minutes reading his or her letters of recommendation. Tr. 713:12-17 (Rosenberg). Thus, readers may spend as little as 4 minutes reviewing and scoring the remainder of the application—as well as providing written comments explaining their provisional admissions decision.

67. Moreover, it was Rosenberg's job to "keep the trains running on time" by enforcing the weekly application quotas. Tr. 718:13-24 (Rosenberg). Whenever a reader does not finish his or her application reviews in a timely fashion, UNC reassigns the remaining applications to another admissions officer. Tr. 719:10-13 (Rosenberg).

68. Not only are readers instructed to review applications quickly, but they also are instructed to review applications in such a way that all readers would score the same file in the same way. UNC conducts "all-reader training" every year before readers begin reviewing applications. Tr. 709:4-6 (Rosenberg). It candidly acknowledges that the purpose of this training is to ensure that readers are "on the same page." Tr. 709:8-11 (Rosenberg). UNC also assigns a second reader to review new readers' decisions to ensure that they are "calibrated to what the University's admissions priorities are." Tr. 707:20-23 (Rosenberg); *see also* PX070, UNC0179483 (additional reader training needed to "increase our calibration").

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69.   The University even conducted a "reliability test" of readers' decisions, giving each reader the same application to review, to ensure that every reader understood how to score applicants the same way on UNC's ratings. Tr. 708:16-18 (Rosenberg). The point of the exercise was "to see how calibrated [readers] were." Tr. 708:19-23 (Rosenberg).

70.   In fact, UNC's readers are so finely "calibrated" that 99% of the time, the second reader does not have to change the first reader's ratings. Tr. 708:6-15 (Rosenberg). Moreover, readers know that they are being calibrated and seek confirmation that they are hewing to UNC's admissions priorities. PX070, UNC0179479.

2.   Evaluating Standardized Test Scores

71.   Readers evaluate test scores differently depending on the applicant's race. Parrish Dep. 207:4-19 (admissions officers "treat all Asian American students the same" when considering their standardized test scores because they "test higher than African American, Hispanic/Latino, and … American Indian[s]").

72.   When readers' admissions decisions reflect that they do not "grasp[] the testing context of URM," senior admissions officials intervene to make clear that URM test results must be treated differently. PX090, UNC0128687; *see also* PX086, UNC0128124 ("[S[everal decisions made me concerned with the overall understanding our [sic] of [out-of-state-pool] and URM."); PX001 ¶55 (Asian-American admits average 200 points higher on the SAT than African-American admits).

3.   Evaluating an Applicant's Race

73.   As noted above, UNC's readers may consider race at any stage of the process.

74.   And they do, especially for URMs. Admissions officers frequently highlight the applicant's race as a key feature. *See, e.g.,* PX071, UNC0209034 ("She is an AA [African-American] female, with solid everything that adds up to an admit for me."); PX075, UNC0230512 ("I'm going through this trouble because this is a bi-racial (black/white) male."); PX084, UNC0224139 ("I just opened a brown girl who's an 810 [SAT]."); *id.* (noting she was just "think[ing] of a wonderful brown girl a bit ago"); *id.*, UNC0224140 ("If its brown and above a 1300 [SAT] put them in for [the] merit/Excel [scholarship]."); *id.*, UNC0224141 (even with a 26 ACT, the applicant is "[s]till yes, give these brown babies a shot at these merit $$"); *id.*, UNC0224142-43 (expressing disappointment that an applicant with perfect test scores was Asian and not "Brown"); PX 074, UNC0209194 ("Stellar academics for a Native Amer/African Amer kid[.]"); PX076, UNC0231016; PX081, UNC0194840; PX080, UNC0194845.

4.   Making Tentative Admissions Decisions

75.   The reader makes a tentative decision to either admit, deny, defer (during early action), or waitlist (during regular action), Tr. 696:7-697:6 (Rosenberg), by considering the five ratings and all other information contained in the application, including standardized test scores, recommendation letters, legacy status, and race. Tr. 642:11-643:10 (Farmer); Tr. 712:4-25 (Rosenberg).

76.   Readers take race into account when deciding whether to tentatively admit or deny an applicant; race can be the "tipping point." Polk Dep. 42:7-15; Tr. 642:7-13 (Farmer); PX109, UNC0323609-10; PX085 UNC0209654 ("Perhaps the URM tipped the decision."); PX084, UNC0224140.

D. Monitoring the Racial Makeup of the Class

77.   Before this suit was filed (November 2014), UNC monitored the racial makeup of its incoming class as reader decisions were made. First, UNC regularly sent senior admissions officers daily "core reports" that identified the racial/ethnic composition of the admitted class as of that date, with comparisons to the prior year. Polk Dep. 42:16-44:1, Tr. 87:5-92:2 (Kretchmar); PX067, UNC0108650-51; PX058, UNC0081617-18.

78.   Second, admissions officers discussed the ethnic makeup of the admitted class at Admissions Office meetings. Polk Dep. 44:15-45:16.

79.   Third, senior admissions officers received updates on rolling enrollment rate, PX067, UNC0108650 ("Down 17.5% for [African American students] – Ugh."), and the projected "yield" of various minorities throughout the admissions cycle, PX062, UNC0083090-91; PX066, UNC0143450; Tr. 85:2-86:1 (Kretchmar). After the start of this litigation, UNC stopped engaging in these race-monitoring practices. Tr. 657:1-25 (Farmer); Polk Dep. 44:15-45:16; PX003, Interrogatories 8-9.

80.   At trial, Farmer admitted that he "removed information about the racial composition of the class" because he "knew that [UNC's] admissions process was going to be subject to discovery" in this case and didn't "want anybody to get the wrong idea." Tr. 657:1-25 (Farmer).

E. School Group Review

81.   The Admissions Office finalizes admissions decisions through "school group review" or "SGR". Tr. 700:9-16 (Rosenberg).

82.   During SGR, senior admissions officers receive reports that display all applicants from the same high school, key information about each applicant (*e.g.*, ratings, test scores, legacy status), and the tentative admissions decision for each applicant. Tr. 535:16-537:25 (Farmer).

83.   Before this lawsuit, SGR reports prominently identified the race of each applicant listed. Tr. 78:6-11 (Kretchmar); Polk Dep. 136:11-137:2.

84.   UNC removed race from SGR reports at the advice of counsel, Polk Dep. 136:11-137:2, yet race is still easily available by clicking on the applicant's name on the SGR report. Tr. 77:14-78:5 (Kretchmar) (SGR reviewers "can easily access all the information in the applicant's file," including "information about the race or ethnic identity of the applicant"); Tr. 705:19-706:9 (Rosenberg) ("the race of the applicant [is] just one click away"); Perkins Dep. 97:7-13 ("The moment you click into a file, it's available to you."); PX098, UNC0379534 (handwritten notations on SGR report highlighting URM status). And UNC officials have asked that race be put back on SGR reports. PX070, UNC179481.

85.   The admissions officer then reviews the SGR report and, if he or she chooses, the applications identified on the report; if the admissions officer determines that any admission decision should be changed, the officer will change the decision (*e.g.*, from deny to admit). Tr. 536:13-537:25 (Farmer); PX100, UNC0064294; Coleman Dep. 155:17-24.

86.   SGR "shapes and fine-tunes" the class, including from a racial/ethnic standpoint, PX070, UNC0179481; officers take race into account when deciding whether to change an applicant's tentative admissions decision, PX070, UNC0179483; Tr. 706:6-9 (Rosenberg) (acknowledging looking up applicant's race during SGR); PX099, UNC0064291

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("[b]e aware of additional considerations such as … ethnicity"), and often cite URM status as a basis for admitting applicants via SGR, *see, e.g.*, PX087, UNC0194911 ("Defer to admit. UR."); PX088, UNC0194935 ("Defer to admit. UR."); *id.* ("Possible deny to defer. UR.").

87.   After SGR, UNC releases its admissions decisions to the applicants. Polk Dep. 31:11-16. If there are spaces available, UNC will admit applicants through the waitlist, Parish Dep. 86:6-88:12, using the same evaluation criteria, including race. Polk Dep. 218:21-220:25.

F. Post-Admission Evaluation

88.   Despite claiming that "students who are admitted under the current admissions program are capable and qualified to succeed at UNC," Dean Dep. 177:11-178:24; *see also* Tr. 691:12-13 (Rosenberg), URMs underperform academically relative to non-URMs. PX112, UNC0236941 (Native American and African-American students' GPA on average 0.33 points or more lower than white students'); *id.* at UNC0236940 (four-year graduation rates for Black and Native American male students lagged behind white male students by an average of more than 20% from 2009 through 2013); PX104, UNC0124112-13.

89.   UNC officials repeatedly have lamented this achievement gap and described it as a "crisis" with respect to URM males. PX103, UNC0109850.

90.   UNC has recognized that low academic qualifications are linked to poor academic outcomes. Its Retention Task Force, for example, concluded that "[g]raduation outcomes differed significantly by level of academic preparation at the time of entry to Carolina." PX104, UNC0124116.

91.   The Provost's Minority Male Workgroup recommended that UNC conduct a "review of existing institutional policies"—including "admission criteria"—"to identify any that may adversely impact or inhibit the success of URM males." PX105, UNC0326485. Yet UNC never bothered to analyze whether its use of race is doing just that.

92.   It is unsurprising that UNC never bothered to look. In reality, UNC willfully blinded itself to the true impact race has in its admissions decisions.

93.   Although the Admissions Office has examined the effect of numerous factors on admissions decisions, including gender, legacy, admissions cycle (early vs. regular), and standardized test scores, it never analyzed the extent to which race is affecting its decisionmaking—despite having a model that would permit it to do so. Tr. 653:11-656:25 (Farmer); Tr. 83:3-84:6 (Kretchmar).

94.   A year after the close of fact discovery, UNC produced documents showing that its Data Analytics Subcommittee conducted a regression analysis showing that URM status is "uniquely predictive of admission," PX068, UNC0380807—*i.e.*, that the coefficient for URM status is statistically significant, Kosorok Dep. 118:21-119:7.

IV.   Statistical Evidence of UNC's Racial Preferences and UNC's Mechanical Use of Race in the Admissions Process

95.   UNC produced data relating to all applicants from the 2012-13, 2013-14, 2014-15, 2015-2016, and 2016-17 admissions cycles (that is, for the incoming freshman classes that would make up the graduating classes of 2016 to 2021). J. Stipulation ¶ 99.

96.   This dataset includes information on 200,412 applicants during that period (65,123 in-state applicants and 135,289 out-of-state applicants). *Id.* ¶ 100.

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97. It provides a substantial amount of information on each applicant during this period of time, including data on admissions and enrollment decisions, whether the applicant applied for early action, academic background measures such as test scores and grades, the five ratings that the University's admissions officers assigned to each file, and demographic information such as residency status, race/ethnicity, gender, and whether the applicant is a first-generation college student. The data also include information relating to several other special recruiting categories such as scholarship finalists and athletes. *Id.* ¶ 101.

98. SFFA and UNC retained economists to analyze the dataset and to offer expert opinions on UNC's admissions process and the role of race therein. Both economists employed econometric modeling in their analyses, although they disagreed over which data to include in their work and over their respective modeling choices. Econometric modeling is the standard practice for modeling complicated systems of choice like UNC's admissions system. Tr. 163:1-8; 116:23-117:6 (Arcidiacono).

99. The data permit reliable statistical analyses of UNC's admissions system, including a descriptive analysis and a more sophisticated logistic regression analysis. Tr. 124:15-125:6; 125:17-126:7 (Arcidiacono).

100. SFFA retained Peter Arcidiacono—a professor in the Department of Economics at Duke University—to analyze the data produced by UNC and to answer several questions about UNC's admissions process, using accepted econometric and statistical methods and techniques. Tr. 114:18-117:6 (Arcidiacono).

101. Professor Arcidiacono has served as a tenured professor at Duke since 2006. Tr. 115:10-17 (Arcidiacono).

102. Professor Arcidiacono's research focuses broadly on labor economics and applied microeconomics, with a special emphasis on the economics of education. Tr. 116:7-11 (Arcidiacono).

103. He is a fellow of the Econometric Society and the International Association of Applied Econometrics. Tr. 124:6-12 (Arcidiacono).

104. Professor Arcidiacono has published roughly forty academic papers, the vast majority of which have involved econometric modeling. Tr. 118:21-24 (Arcidiacono).

105. Nearly ten of those papers have included econometric modeling related to affirmative action. Tr. 118:25-119:6 (Arcidiacono).

106. In 2015, the *Annual Review of Economics*—where Dr. Caroline Hoxby was an editor at the time—invited Professor Arcidiacono to submit an academic paper surveying economic literature on affirmative action in undergraduate education. Tr. 119:13-18 (Arcidiacono); Tr. 1118:25-1119:14; 1120:5-11; 1121:16-24 (Hoxby).

107. Professor Arcidiacono previously served as an expert witness in a similar action brought by SFFA against Harvard College. There, the court found Professor Arcidiacono to be "highly respected" and "well-qualified." *Students for Fair Admission, Inc. v. President & Fellows of Harvard Coll. (Harvard Corp.)*, 397 F. Supp. 3d 126, 158 n.40, 159 (D. Mass. 2019).

108. UNC retained Dr. Caroline Hoxby of Stanford University to offer expert testimony. Dr. Hoxby's research focuses on the economics of higher education. Tr. 931:3-6 (Hoxby). She is the program director of the Economics of Education program at National Bureau of Economic Research (NBER). Tr. 935:14-17 (Hoxby).

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A. Descriptive Evidence of UNC's Use of Race in Admissions

1. UNC's Admissions Process Operates Differently for In-State and Out-of-State Applicants.

109.   UNC imposes a residency-based quota on its incoming freshman class. Pursuant to the Board of Governors' Policy 700.1.3, the enrollment of non-North Carolina residents in each incoming freshman class may not exceed 18 percent. J. Stipulation ¶ 38. If UNC exceeds this cap, the Board of Governors can reduce UNC's operating budget for the following year. J. Stipulation ¶ 39. UNC, however, receives applications from approximately twice as many out-of-state applicants as in-state applicants. *Id.* ¶ 40.

110.   The combination of these two factors makes out-of-state admission to UNC "much more competitive" than in-state admission. Tr. 128:11-17 (Arcidiacono); Tr. 157:20-21 (Arcidiacono) ("[O]ut-of-state admissions is so much more competitive."); Tr. 131:17-19 (Arcidiacono) (For out-of-state applicants, UNC is a "very selective school, whereas in state … , it's much more of a moderately selective school.").

111.   Indeed, comparative admit rates bear this out. While the overall admit rate to UNC is a little above 25%, there is a striking difference between admission rates among the in-state pool (47.9%) and the out-of-state pool (13.5%). Tr. 131:9-19 (Arcidiacono) (referencing Arcidiacono Demonstrative 2).[2]

112.   Moreover, there are substantial differences in how race impacts in-state and out-of-state applicants. In-state non-URM applicants are admitted at a significantly higher rate than their African-American and Hispanic counterparts. For out-of-state applicants, the

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[2] At trial, SFFA provided the Court with copies of the demonstratives used in connection with the testimony of its expert witnesses. Those demonstratives are attached in appendices for the convenience of the Court.

reverse is true: URM applicants are admitted at a significantly higher rate than out-of-state non-URM applicants. Tr. 132:1-15 (Arcidiacono) (referencing Arcidiacono Demonstrative 3).[3]

2. Non-URM Applicants Have Significantly Stronger Qualifications Than URM Applicants.

113.   Non-URM applicants have substantially stronger qualifications than URM applicants—among both in-state and out-of-state applicants. Take in-state applicants, for example. On average, white and Asian-American applicants have significantly higher GPAs, class ranks, and standardized test scores than their URM counterparts. Tr. 161:25-162:9 (Arcidiacono) (referencing Arcidiacono Demonstrative 4).

114.   More specifically, in-state African-American applicants "have substantially lower test scores, lower rank in their class, and lower grades" than all other applicant groups. Tr. 137:5-7 (Arcidiacono). Notably, *rejected* Asian-American applicants have higher SAT math scores than African-American *admits*. Tr. 137:10-13 (Arcidiacono) (referencing Arcidiacono Demonstrative 4).

115.   In-state non-URM applicants likewise score higher than URM applicants on UNC ratings. In particular, non-URM applicants score "better on UNC's program rating, performance rating, extracurricular rating, and essay rating than [URM applicants]. When we get to the personal quality rating, it flips, and there [URM applicants] rate higher." Tr. 137:15-23 (Arcidiacono) (referencing Arcidiacono Demonstrative 4).

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[3] A UNC internal study produced after the close of fact discovery revealed that UNC believes that residency is the variable with the largest impact on admission when the entire applicant pool is taken as a whole. Kosorok Dep. 173:7-174:7; Curran Dep. 25:4-18.

116.   The same basic patterns hold true for out-of-state applicants. "It's again the case that [non-URM applicants] have higher test scores and higher class rank" than URM applicants. Tr. 139:15-20 (Arcidiacono) (referencing Arcidiacono Demonstrative 5).

117.   Hispanic applicants have slightly higher program ratings than white applicants, but the patterns for out-of-state applicants are otherwise the same as in-state applicants. Tr. 140:5-10 (Arcidiacono) (referencing Arcidiacono Demonstrative 5). And, again, Asian-American rejects actually have higher SAT math scores than African-American admits. Tr. 139:21-23 (Arcidiacono) (referencing Arcidiacono Demonstrative 5).

118.   Similarly, out-of-state non-URM applicants score better on UNC's ratings than their URM counterparts. Although out-of-state Hispanic applicants have somewhat higher program ratings than white applicants, Asian-American applicants have "by far the highest program rating" and African-American applicants have the lowest. Tr. 140:10-11 (Arcidiacono) (referencing Arcidiacono Demonstrative 5).

119.   Non-URM applicants have "substantially higher performance ratings than African Americans and Hispanics, … higher extracurricular ratings, [and] higher essay [rating]s." Tr. 140:5-14 (Arcidiacono) (referencing Arcidiacono Demonstrative 5). It is only on the personal quality rating where "things change" and URM applicants score generally higher than non-URM applicants (although even there, African-American and Asian-American applicants score the same). Tr. 140:15-18 (Arcidiacono) (referencing Arcidiacono Demonstrative 5).

120.   Professor Arcidiacono conducted a simple analysis to examine racial/ethnic differences in admission rates for students with similar academic qualifications. To do so, he

constructed an academic index, which is a "summary measure of the academic strength" of each applicant, based on their standardized test scores and GPA as recorded by UNC in the produced data. Tr. 141:5-21 (Arcidiacono).

121.   This academic index is a weighted average of an applicant's SAT score and high school GPA. Tr. 141:11-18 (Arcidiacono).[4] This type of summary statistic is commonly used by economists and also is similar to the academic indexes used by Harvard and the other Ivy League schools to summarize an applicant's academic strength. Tr. 141:22-142:11; 315:16-20 (Arcidiacono).[5]

122.   Professor Arcidiacono used the academic index to make comparisons between different groups of applicants with the same academic qualifications. To do this, he partitioned the academic index into deciles in order to determine how academic qualifications and patterns of admissions differ by race/ethnicity. Tr. 144:5-21; 149:2-159:9 (Arcidiacono).

123.   Professor Arcidiacono's decile analysis revealed "large cross-racial differences" in academic qualifications. Tr. 151:4; 155:19-21 (Arcidiacono).

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[4] As a technical matter, the academic index is the sum of the z-scores of an applicant's SAT score and 4-point scale GPA. Tr. 141:12-18 (Arcidiacono). Approximately 5 percent of in-state applicants and 30 percent of out-of-state applicants do not show either a four-point scale GPA or an SAT score in the data produced by UNC. That said, the set of applicants for whom Professor Arcidiacono created an academic index makes up the vast majority of his full sample and is in fact representative of that sample. Tr. 143:2-23 (Arcidiacono) (referencing Arcidiacono Demonstrative 7).

[5] Professor Arcidiacono analyzed the academic index in comparison to UNC's ratings and found that the academic index (and thus grades and standardized test scores) are "positively correlated" with all of UNC's ratings, for both in-state and out-of-state applicants, Tr. 144:5-149:1 (Arcidiacono) (referencing Arcidiacono Demonstratives 8-9), and with admission to UNC, Tr. 153:8-9; 158:5-11 (Arcidiacono) (referencing Arcidiacono Demonstratives 12, 15).

124.   In particular, it demonstrated that non-URM applicants are far more academically qualified than URM applicants, both in-state and out-of-state. Among in-state applicants, white and Asian-American applicants have "disproportionately … high academic indexes" whereas URM applicants are "the reverse." Tr. 149:8-151:1 (Arcidiacono).

125.   For example, 10.7 percent of white applicants and almost 20 percent of Asian-American applicants are in the top academic decile, whereas less than 1 percent of African-American applicants and less than 4 percent of Hispanic applicants are in the top decile. Tr. 152:1-5 (Arcidiacono) (referencing Arcidiacono Demonstrative 11).

126.   Moving to lower deciles, the non-URM share drops and the URM share increases, such that the pattern is the opposite in the bottom deciles. Tr. 152:6-14 (Arcidiacono) (referencing Arcidiacono Demonstrative 11).

127.   Only 5.2 percent of white applicants and about 6.5 percent of Asian-American applicants are in the bottom decile, while nearly one-third of all African-American applicants and more than one-sixth of all Hispanic applicants are in the bottom decile. Tr. 152:16-19 (Arcidiacono) (referencing Arcidiacono Demonstrative 11).[6]

128.   Out-of-state applicants exhibit the same "broadly similar patterns." Tr. 156:9 (Arcidiacono). Asian American applicants are "disproportionately [at] the top" and African-American applicants are "disproportionately [at] the bottom," Tr. 157:1-3 (Arcidiacono). At the same time, the fewest number of white applicants are in the bottom decile, while

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[6] Among in-state applicants, more than half of African Americans are in the bottom two deciles. Tr. 155:8-10 (Arcidiacono) (referencing Arcidiacono Demonstrative 11).

Hispanic applicants are "slightly disproportionately represented in the bottom deciles." Tr. 155:19-156:23 (Arcidiacono).

129. Professor Arcidiacono's decile analysis also reveals that there are substantial differences between the admissions rates of different racial groups within the same academic qualifications—both in-state and-out-of-state. With the exception of the top decile (where admission rates are above 97% for every racial group), in-state URM applicants have higher admit rates than non-URMs in every decile. Tr. 154:2-12 (Arcidiacono) (referencing Arcidiacono Demonstrative 12).

130. In the competitive band of deciles, the disparities in admit rates are massive. For example, in the fifth decile, white and Asian-American applicants "have admit rates that are below 30 percent, but the African-American admit rate is over 40 points higher, at 71 percent, and the Hispanic admit rate is almost 54 percent." Tr. 154:14-18 (Arcidiacono).

131. The racial disparities in admit rates are even more striking for out-of-state applicants. Tr. 159:4 (Arcidiacono). Again, take the fifth decile. "The white admit rate is 2.9 percent. The Asian American admit rate is 1.4 percent; and then you see for African Americans, it's 39.6 percent; and for Hispanics, it's almost 16 percent." Tr. 159:4-7 (Arcidiacono) (referencing Arcidiacono Demonstrative 15).

132. Notably, the African-American admit rate in the fifth decile (39.6 percent) is higher than the admit rate for non-URM applicants in every decile except the top one. Tr. 159:6-9 (Arcidiacono) (referencing Arcidiacono Demonstrative 15).

133. To help illustrate the practical effect of these racial disparities in admit rates among applicants with similar academic qualifications, Professor Arcidiacono observed the

racial composition of the admitted class if admission were driven solely by academic index. This analysis showed that the admitted class would change substantially. For in-state applicants, the number of white admits would rise from "a little over 18,000 to [more than] 19,000;" Asian-American admits would increase from a little more than 3,000 to more than 3,400; African-American admits would fall "from 2,275 to 1,055;" and Hispanic admits would drop "from 1,414 to 1,031." Tr. 160:16-22 (Arcidiacono) (referencing Arcidiacono Demonstrative 16).

134.   The changes would be even more stark for the out-of-state pool. The share of African-American admits "would fall from 12.7 percent to 1.9 percent" and the Hispanic share "would fall from 14.1 to 8.2," with "corresponding increases" for non-URMs. Tr. 161:13-16 (Arcidiacono) (referencing Arcidiacono Demonstrative 17).

135.   This analysis demonstrates that, if admission to UNC were based only on the academic index, the admitted classes would shift to a substantially larger population of non-URM students.

B. Logistic Regression Analysis Demonstrates that UNC Employs Significant Racial Preferences and Uses Racial Preferences in a Non-Individualized, Highly Formulaic Manner.

136.   As detailed above, Professor Arcidiacono's descriptive analysis demonstrates that non-URM applicants are stronger on many of the factors associated with admission to UNC—they have higher test scores, higher grades, and higher scores on UNC's ratings (with the exception of the personal quality rating). His descriptive analysis further shows that there are large racial disparities in admit rates among applicant groups with similar academic qualifications. But descriptive analysis merely identifies basic patterns in the data. Tr. 125:22-

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23, 131:1-4 (Arcidiacono). Econometric modeling is necessary to reveal the effect of race on UNC's admissions decisions. Tr. 162:16-19 (Arcidiacono).

137.   Econometric modeling is commonly employed in discrete choice analysis to model decisionmaking. It is common in the field to model decisionmaking that includes subjective elements or components. Tr. 117:7-16 (Arcidiacono). Indeed, economists often conduct modeling that involves subjective factors. Tr. 173:8-10, 174:16-19 (Arcidiacono).

138.   Two common statistical methods for estimating models where the outcome is binary (as is the case with whether or not an applicant is admitted) are logit (which Professor Arcidiacono employed) and probit (which Dr. Hoxby employed). Both are types of non-linear models where applicants are admitted when a linear combination of their observed and unobserved characteristics exceeds some threshold. Tr. 1136:16-20 (Hoxby); Tr. 243:25-244:2 (Arcidiacono).

139.   A logit model produces two relevant metrics. First, it assigns a "coefficient" to each variable, *i.e.*, a number that represents how much weight that factor receives in the model compared to the baseline (that is, how much that factor matters in the model of admissions decisions). Tr. 164:13-18, 180:19-20 (Arcidiacono).

140.   In an admissions model, a "positive" coefficient means an applicant with that trait is more likely to be admitted; a "negative" coefficient means an applicant with that trait is less likely to be admitted. Tr. 164:21-165:1 (Arcidiacono). The magnitude of a coefficient can matter. "[W]hen the variable is scaled appropriately, as it would be in the case of race, [the magnitude of the coefficient] tell[s] you something about the size … of the preference" resulting from UNC's use of race. Tr. 165:14-18; *see also* 180:21-23 (Arcidiacono).

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141.   Second, a logit model can produce a predicted probability of admission. This can be used to predict the probability of being admitted under different circumstances—for example, when racial preferences are "turn[ed] off" in the model. Tr. 165:20-25 (Arcidiacono).

1.   UNC's Gives Significant Racial Preferences to URM Applicants.

142.   Professor Arcidiacono estimated a series of seven logistic regression models of admission in order to estimate the magnitude of UNC's racial preferences. He did this separately for the in-state and out-of-state applicant pools because it is readily apparent that many of the variables UNC considers in evaluating candidates—and UNC's ultimate admissions decisions—operate differently for these two applicant groups. *See supra* ¶¶109-12.

143.   Professor Arcidiacono's models are highly accurate; in particular, his preferred model (model 4) accurately predicts admissions decisions more than 92 percent of the time for in-state applicants and more than 93 percent of the time for out-of-state applicants. Tr. 199:18-200:1 (in state), 206:5-7 (out of state) (Arcidiacono) (referencing Arcidiacono Demonstratives 26, 29).

144.   In addition, Professor Arcidiacono's models demonstrate that UNC gives very large racial preferences to URM applicants. Professor Arcidiacono's analysis shows that, for both in-state and out-of-state applicants, race is a determinative factor for many URMs. Professor Arcidiacono employed four statistical methods for quantifying the effect of UNC's racial preferences.

a.   *Transformational Analysis.*

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145. The first is Professor Arcidiacono's transformational analysis. It involves taking a hypothetical applicant whose characteristics accord with a particular probability of admission and then using the appropriate coefficients in his preferred model to change or "transform" one characteristic of that applicant and recompute his or her probability of admission. Tr. 210:12-24, 213:18-214:18 (Arcidiacono).

146. This allows Professor Arcidiacono to show how much a hypothetical non-URM applicant's likelihood of admission would rise by changing his or her race to URM (while keeping all other characteristics the same). Tr. 214:21-215:11, 215:18-21 (Arcidiacono).

147. Consider an in-state male, non-First Generation College (FGC) white applicant with a 25% chance of admission: His probability of admission would increase to almost 71% had he been treated like a Hispanic applicant, and to over 92% had he been treated like an African-American applicant. Tr. 216:8-17 (Arcidiacono) (referencing Arcidiacono Demonstrative 33).

148. Similarly, consider an in-state male, non-FGC white applicant with a 10% chance of admission: His probability of admission would increase to nearly 45% had he been treated like a Hispanic applicant, and to over 79% had he been treated like an African-American applicant. Tr. 216:20-24 (Arcidiacono) (referencing Arcidiacono Demonstrative 33).

149. UNC's racial preferences are even larger for out-of-state URM applicants. Tr. 221:6-7 ("The out-of-state preferences are simply enormous.") (Arcidiacono). If a male, non-FGC white applicant with a 10% chance of admission were an out-of-state applicant, his

probability of admission would increase to 69% had he been treated like a Hispanic applicant and *98%* had he been treated like an African-American applicant. Tr. 220:23-221:10 (Arcidiacono) (referencing Arcidiacono Demonstrative 34).

150.   If a male, non-FGC white applicant with a 25% chance of admission were an out-of-state applicant, his probability of admission would increase to more than 87% had he been treated like a Hispanic applicant and *more than 99%* had he been treated like an African-American applicant. Tr. 220:9-22 (Arcidiacono) (referencing Arcidiacono Demonstrative 34). Simply changing this hypothetical white applicant's race to either Hispanic or African American thus would transform him from an unlikely admit to an almost certain admit.

b.   *Average Marginal Effect.*

151.   The second method Professor Arcidiacono employed to quantify the effect of UNC's racial preferences is to determine the average marginal effect of race. Tr. 230:4-20 (Arcidiacono). Using his preferred model's outputs, Professor Arcidiacono can compute the marginal effect of race for an applicant by finding the difference in his or her probability of admission with and without racial preferences. The average of the marginal effects for all applicants in the model is the average marginal effect. Tr. 211:4-16, 230:4-20 (Arcidiacono).

152.   Economists often use the average marginal effect in this manner. Tr. 231:1-6 (Arcidiacono). Indeed, Professor Arcidiacono used the average marginal effect in this manner in the survey article that was published in the *Annual Review of Economics* when Dr. Hoxby was an editor. Tr. 1118:25-1119:8, 1120:5-112:3 (Hoxby). And both Professor Arcidiacono and Harvard's expert economist (Dr. David Card) employed average marginal

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effect analysis in quantifying the effect of race on Harvard's admissions decisions. *Students for Fair Admissions, Inc.*, 397 F. Supp. 3d at 165-68; *see also id.* at 176.

153.   Professor Arcidiacono's average marginal effect analysis further illustrates the magnitude of UNC's racial preferences. For example, in-state Hispanic applicants are admitted at a rate of 41% and would experience a 9.7% drop in their admission rate if they were treated as white applicants. Tr. 234:5-14 (Arcidiacono) (referencing Arcidiacono Demonstrative 37). In other words, racial preferences account for nearly a fourth of admissions for in-state Hispanic applicants. Tr. 234:13-14 (Arcidiacono) (referencing Arcidiacono Demonstrative 38).

154.   UNC's preferences for African-American applicants are even larger. In-state African-American applicants are admitted at a rate of 30.5% with racial preferences, but removing those preferences would drop their admissions rate to only 17.8%. Tr. 231:20-232:5 (Arcidiacono) (referencing Arcidiacono Demonstrative 37). In other words, racial preferences account for nearly 42% of African-American in-state admissions. Tr. 234:3-4 (Arcidiacono) (referencing Arcidiacono Demonstrative 38).

155.   UNC's racial preferences for URMs are even larger for out-of-state applicants. Out-of-state Hispanic applicants have admit rates of 20.3%. Tr. 235:10-13 (Arcidiacono). But without racial preferences, their admit rates would fall to 6.0%. Tr. 235:12-15 (Arcidiacono) (referencing Arcidiacono Demonstrative 37). UNC's racial preferences thus account for 70% of out-of-state Hispanic admissions. Tr. 235:14-15 (referencing Arcidiacono Demonstrative 39).

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156.   Out-of-state admission rates for African-American applicants are 17.1%; without racial preferences, their admit rates would plummet to 1.5%. Tr. 235:1-7 (Arcidiacono). In other words, racial preferences account for over 90% of out-of-state African-American admissions. Tr. 235:1-9 (Arcidiacono) (referencing Arcidiacono Demonstrative 39).[7]

157.   Professor Arcidiacono also conducted average marginal effect analysis on Dr. Hoxby's preferred model. Tr. 235:20-237:15 (Arcidiacono); Arcidiacono Demonstrative 63. Dr. Hoxby's model yielded large average marginal effects, confirming that UNC's "racial preferences are quite large." Tr. 237:14-15 (Arcidiacono).

c.   Admitted URMs Analysis.

158.   The third method Professor Arcidiacono employed to quantify the effect of UNC's racial preferences is his admitted URMs analysis. Tr. 237:19-239:14; Arcidiacono Demonstrative 42. This involves showing the effect of removing racial preferences on the admission rates of URM applicants who were actually admitted to UNC (that is, URMs whose admit rate is known to be 100%). Tr. 239:12-23 (Arcidiacono).

159.   Professor Arcidiacono conducted this analysis by taking the entire set of URM applicants who were admitted to UNC and then recomputing their probabilities of admission after "turning off" UNC's racial preferences. Tr. 239:12-23 (Arcidiacono).

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[7] Compared to UNC's racial preferences, its preferences for FGC applicants are quite small. UNC gives first-generation URM applicants a much smaller preference for their FGC status than it gives first-generation non-URM applicants. Relative to the non-URM applicant, the overall preference the URM applicant receives would be larger if the two applicants were non-FGC than if they were FGC. Tr. 219:21-23 (Arcidiacono).

160. For in-state applicants, if racial preferences were removed, Hispanic admits would see an average probability of admission of 75.8%—a 24.2 percentage point decrease. Tr. 240:25-241:9 (Arcidiacono) (referencing Arcidiacono Demonstrative 43).

161. For in-state African-American admits, removing racial preferences would reduce their average probability of admission to 57.8%, a 42.2 percentage point decrease. Tr. 240:3-13 (Arcidiacono) (referencing Arcidiacono Demonstrative 43).

162. The effect on out-of-state URM admits is even more striking. Tr. 241:14-17 (Arcidiacono). For out-of-state Hispanic admits, removing racial preferences would result in an average probability of admission of 29.2%, a 70.8 percentage point decrease. Tr. 241:23-242:7 (Arcidiacono) (referencing Arcidiacono Demonstrative 43).

163. And for out-of-state African-American admits, their average probability of admission would drop to 8.7%, a 91.3 percentage point decrease. Tr. 241:14-22 (Arcidiacono) (referencing Arcidiacono Demonstrative 43).

d. Capacity Constraints Analysis.

164. Professor Arcidiacono's fourth method of quantifying the effect of UNC's racial preferences is a capacity constraints analysis, which illustrates the effect of UNC's racial preferences on the incoming admitted classes *as a whole*. Tr. 242:22-243:14, 243:17-244:11 (Arcidiacono). This analysis involves removing the effect of UNC's racial preferences from his preferred model while holding fixed the number of admits UNC made each year for the six-year period from 2012 through 2017. Tr. 242:22-243:14, 243:17-244:11 (Arcidiacono).

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165.   Professor Arcidiacono's capacity constraints analysis demonstrates the striking effect of UNC's racial preferences in boosting URM admissions across the entire class. For the in-state applicant pool, removing racial preferences would result in approximately 1,100 additional non-URM admits over the six-year period—or nearly two hundred per year—and a corresponding decrease in the number of URM admits. Tr. 245:12-18 (Arcidiacono) (referencing Arcidiacono Demonstrative 46).

166.   And for the out-of-state pool, removing racial preferences would result in nearly 2,500 more non-URM admits over the same period, or more than 400 per year (and a corresponding decrease in the number of URM admits). Tr. 246:9-17 (Arcidiacono) (referencing Arcidiacono Demonstrative 47).

167.   Combining the in-state and out-of-state figures, removing racial preferences would increase non-URM admits by approximately 3600 over the six-year period and reduce the number of URM admits by a corresponding number. Tr. 247:4-21 (Arcidiacono) (referencing Arcidiacono Demonstrative 48). On average, then, UNC denies admission to approximately 600 non-URM applicants each year on account of race.

168.   The overall takeaway from Professor Arcidiacono's four distinct statistical analyses is that UNC's "[r]acial preferences are quite large, especially for out-of-state applicants," and "removing them would have a substantial effect on the racial distribution of the class." Tr. 248:4-7 (Arcidiacono).

169.   Professor Arcidiacono's analysis actually underestimates the magnitude of UNC's racial preferences. First, non-URM applicants are strong on the measures that are observed in the data, suggesting that they would likely be strong on unobserved variables

not in the data. Tr. 305:23-306:2, 176:1-14 (Arcidiacono). Second, there is evidence of racial

bias in the personal quality rating in favor of African Americans and Hispanics; accounting

for this would show preferences of even larger magnitude. Tr. 293:3-294:25 (Arcidiacono);

62 (showing larger average marginal effects for models that do not include the personal

quality rating).

2. UNC Uses Race in a Mechanical, Formulaic Way Instead of an Individualized Fashion.

170. Professor Arcidiacono's modeling is highly accurate at predicting UNC's

actual admissions decisions. His preferred model is well over 90% accurate in predicting

admissions decisions for both the in-state (92.1%) and the out-of-state (93.3%) applicant

pools. Tr. 199:24-200:1 (in state), 206:6-7 (out of state) (Arcidiacono) (referencing

Arcidiacono Demonstratives 26, 29).

171. These levels of accuracy are "incredibly high" compared to what economists

see in an academic setting. Tr. 208:22-25 (Arcidiacono). They indicate that UNC's

admissions process "is highly formulaic," especially for in-state applicants. Tr. 208:24-209:1

(Arcidiacono).

172. As Professor Arcidiacono explains, his models generate a prediction of each

applicant's likelihood of admission. He created a distribution of those predictions for his

preferred model, for both in-state and out-of-state applicants. The distribution for in-state

applicants yielded a "U-shaped curve" with predictions heavily clustered near "0" (i.e.,

certain to be rejected) and "1" (i.e., certain to be admitted) and "very few applicants that

have predicted probabilities of admission in the middle." Tr. 201:9-202:25 (Arcidiacono)

(referencing Arcidiacono Demonstrative 27). In other words, Professor Arcidiacono's

preferred model has an easy time sorting applicants into those very likely to be rejected and very likely to be admitted. Tr. 202:20-25 (Arcidiacono).

173. Notably, those predictions match up very closely to UNC's actual admissions decisions. Tr. 203:9-205:6 (in state), 207:11-208:21 (out of state) (referencing Arcidiacono Demonstratives 28, 30). The accuracy with which Professor Arcidiacono's models predict admission indicates that UNC's admissions process is "highly formulaic, especially in state." Tr. 208:22-209:1 (Arcidiacono).

C. Dr. Hoxby's Analysis of UNC's Use of Race is Unpersuasive.

174. Dr. Hoxby's analysis is flawed at the outset. She made several errors in her modeling, including by excluding two years of admissions data from her primary models, Tr. 1122:4-24 (Hoxby), and by excluding UNC's ratings from her models, Tr. 173:11-15, 291:12-16 (Arcidiacono). Her models are less accurate and have less predictive power than Professor Arcidiacono's models. Tr. 270:24-271:1 (Arcidiacono).

175. More importantly, Dr. Hoxby's analysis of the magnitude and effect of UNC's racial preferences is fundamentally flawed. She confuses the Pseudo R-Squared and R-Squared metrics, improperly equating them when they are not the same metrics and cannot be used in the same way here. And her novel Shapley Decomposition analysis improperly spreads the effect of UNC's racial preferences across all applicants.

176. Dr. Hoxby's other criticisms of Professor Arcidiacono's work are unpersuasive. In short, her work does nothing to rebut Professor Arcidiacono's statistical analysis.

1. Dr. Hoxby's Shapley Decomposition Analysis Improperly Spreads the Effect of UNC's Racial Preferences Across All Applicants.

177.   Dr. Hoxby's methodology for quantifying the effect of UNC's racial preferences is to take the Pseudo-R Squared metric and to perform a Shapley decomposition of the Pseudo-R Squared in order to determine how much of UNC's admissions decisions are attributable to race. Tr. 948:16-949:23 (Hoxby); Tr. 248:8-16 (Arcidiacono).

178.   The first problem with Dr. Hoxby's methodology is that she confuses the Pseudo-R Squared metric with the R Squared metric.

179.   The Pseudo-R Squared is a measure of fit that is produced by the models that both experts created. Tr. 944:17-18 (Hoxby); Tr. 248:12-14 (Arcidiacono).

180.   Dr. Hoxby purports to use the Pseudo-R Squared to identify the share of the admissions decision explained by the model. Tr. 1130:20-23 (Hoxby). But the Pseudo-R Squared is not the appropriate metric.

181.   The R Square is a metric used in regression models where the outcome is continuous (not discrete, as here). Tr. 249:8-10 (Arcidiacono); Tr. 1123:15-18; 1123:22-1124:1 (Hoxby). Take for example an analysis of various factors that affect a continuous outcome, such as earnings. Tr. 249:10-15 (Arcidiacono). The R Square would indicate the share of the variation of earnings that is explained by the variables controlled for in the model. Tr. 249:13-15 (Arcidiacono). In other words, if the R Square for the earnings model were .5, that would mean the model explained 50% of the variation in the data. Tr. 250:2-7 (Arcidiacono).

182. There are actually many different Pseudo-R Squareds. Tr. 249:16-17 (Arcidiacono); Tr. 1128:2 (Hoxby). Like the R Squared, they give a measure of the fit of the model to the data; and like the R Squared, they run on a scale from 0 to 1, with higher values signifying a better fit. Tr. 249:21-23 (Arcidiacono); Tr. 1128:8-15 (Hoxby). But the similarities end there.

183. Pseudo-R Squareds have no natural interpretation. Tr. 250:11-12 (Arcidiacono). That is, they do not indicate how much the model explains the variation in the data. Tr. 249:23-25, 250:13-16 (Arcidiacono). Indeed, economics textbooks make clear that the Pseudo-R Squared, "even in the discrete choice context for which it was proposed, has no connection to the fit of the model to the data." Greene, W., *Econometric Analysis* 533 (7th Ed. 2012) (passage quoted and discussed at Tr. 1132:12-1133:5 (Hoxby)); *see also* Train, K., *Discrete Choice Methods with Simulation* 68 (2nd ed. 2009) ("The likelihood ratio has no intuitively interpretable meaning for values between the extremes of zero and one.") (passage quoted and discussed at Tr. 1133:8-1134:3 (Hoxby)).

184. In other words, if the Pseudo-R Square were .5, it would *not* mean that the model explained 50% of the variation in the data. In fact, the .5 figure could not be translated into any percentage at all. Tr. 250:8-251:2 (Arcidiacono). Nor would that figure represent the predictive accuracy of the model. *Econometric Analysis* 703 (quoted and discussed at Tr. 1140:18-1141:16 (Hoxby)).

185. Dr. Hoxby's Shapley decomposition analysis starts from the premise that the Pseudo-R Squared represents the percentage of the variation in the data explained by her model. Tr. 946:22-947:10 (Hoxby). It thus is flawed at the outset.

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186.   Dr. Hoxby's novel use of a Shapley decomposition is conceptually flawed for an even more fundamental reason. Tr. 251:3-7 (Arcidiacono).

187.   The Shapley decomposition purports to determine the effect of race across all admissions decisions in the entire applicant pool. Tr. 251:3-14 (Arcidiacono).

188.   To illustrate, consider a university that affords massive preferences to recruited basketball players. Tr. 251:16 (Arcidiacono). Those preferences may well be outcome determinative for the admission of most if not all recruited basketball players. Tr. 251:17-23 (Arcidiacono). But a Shapley decomposition would suggest that the fact of being a recruited basketball player does not matter to admissions decisions because it would spread the effect of being a recruited basketball player (a characteristic of only a handful of applicants) across the entire applicant pool. Tr. 251:24-252:3 (Arcidiacono).

189.   In the same way, Dr. Hoxby's Shapley decomposition analysis spreads the effect of UNC's racial preferences across the approximately 40,000 admissions decisions made each cycle for the entire applicant pool. Tr. 252:9-12 (Arcidiacono). This spreading effect understates the effect of UNC's racial preferences on the applicants who receive those preferences.

190.   Dr. Hoxby could not identify a single "academic paper in which an economist performed a Shapley decomposition of a pseudo-R squared to determine the effect of race in admissions decisions." Tr. 1124:18-23 (Hoxby).

191.   Indeed, Dr. Hoxby could not identify a single working paper in the NBER Economics of Education program she directs that uses the Shapley decomposition. Tr. 1124:24-1125:4 (Hoxby).

2. Dr. Hoxby's Criticisms of Professor Hoxby's Work Are Unpersuasive.

a. *Overfitting.*

192. Dr. Hoxby claims that Professor Arcidiacono's preferred model is overfit. Tr. 975:25-9763 (Hoxby). But Dr. Hoxby's methodology for assessing overfit is fatally flawed.

193. Overfitting is a condition in modeling that may arise when there are too many variables, relative to the number of observations in a given model. Tr. 252:23-253:15 (Arcidiacono). In the present context, it would depend on the number of controls added to the model, relative to the number of applicants in the model. Tr. 253:16-18 (Arcidiacono).

194. When a model is overfit, it means that the model picks up "spurious relationships" in the data and thus conforms to the data in the model (in-sample data) while losing its ability to accurately predict outcomes for data outside of the model (out-of-sample data). Tr. 254:2-14 (Arcidiacono).

195. Fundamentally, overfitting is about out-of-sample error. Tr. 260:19-20 (Arcidiacono). As a model increases in complexity (that is, as controls are added to the model), the model will increase its predictive accuracy as to in-sample data. Tr. 255:20-23 (Arcidiacono).

196. At the same time, the model will tend to increase its predictive accuracy as to out-of-sample data. Tr. 256:1-20 (Arcidiacono) (referencing Arcidiacono Demonstrative 53). It thus will have lower out-of-sample error. Tr. 256:1-20 (Arcidiacono) (referencing Arcidiacono Demonstrative 53). But only up to a point.

197. At some point, as controls are further added to the model, the model will become overfit. Tr. 256:4-8 (Arcidiacono). That is the point at which the model will pick up

spurious relationships in the data and bend towards the in-sample data while becoming less accurate at predicting outcomes for out-of-sample data. Tr. 256:18-21 (Arcidiacono). Out-of-sample error thus increases as a model becomes overfit; after that point, out-of-sample error will continue to increase as the model increases in complexity. Tr. 257:3-9 (Arcidiacono) (referencing Arcidiacono Demonstrative 53).

198.   Thus, when Dr. Hoxby claims that Professor Arcidiacono's preferred model is overfit, what she means is that Professor Arcidiacono's preferred model is overloaded with variables to the point of becoming less accurate at predicting outcomes for out-of-sample data.

199.   There is a common method for testing for overfit; that is to set aside a portion of the data in the data set and estimate the model on less than the full sample of data so that the model can then be tested for out-of-sample accuracy with the set-aside data. Tr. 259:12-13 (Arcidiacono). Typically, an economist would set aside 20% of the data and estimate his or her model using the other 80% of the data. Tr. 259:12-13 (Arcidiacono). Then, the economist could test the model's out-of-sample accuracy on the set-aside 20%. Tr. 269:3-8 (Arcidiacono).

200.   Dr. Hoxby's overfit methodology is flawed in several respects.

201.   First, Dr. Hoxby uses only three of the six years of admissions data. Tr. 258:20-21 (Arcidiacono). By throwing away a massive portion of the available data, Dr. Hoxby unduly limits the model's ability to accept more variables and thus will necessarily skew her overfit analysis. Tr. 258:25-259:3 (Arcidiacono).

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202.	Second, Dr. Hoxby estimates the model on one year of data and tests for out-of-sample accuracy on the other two years. Tr. 259:6-8 (Arcidiacono). She thus further limits the model's ability to accept more variables, which "make[s] it look like overfitting is more of an issue than it actually is." Tr. 259:13-17 (Arcidiacono).

203.	Third, Dr. Hoxby uses "mean squared error" for calculating model error. Tr. 259:20-22 (Arcidiacono). The "error" associated with a predicted probability of admission is 1 minus the predicted probability of admission (if the model predicts admission) or 0 minus the predicted probability of admission (if the model predicts rejection). Tr. 259:20-260:3 (Arcidiacono). "Mean squared error" takes that error and squares it; it then sums up all of the squared errors for all applicants in the model and averages them. Tr. 260:2-4 (Arcidiacono). As Professor Arcidiacono explained, predictive accuracy is a better way to measure error in a model that produces a predicted probability of admission. Tr. 260:6-11 (Arcidiacono).

204.	Fourth, Dr. Hoxby divides out-of-sample mean squared error by in-sample mean squared error and uses the resulting metric as an indicator of overfit (with a higher value suggesting overfit). Tr. 260:13-261:10 (Arcidiacono). This faulty metric is the "biggest problem" with Dr. Hoxby's overfit methodology. Tr. 261:11-14 (Arcidiacono).

205.	In her direct testimony, after Professor Arcidiacono had criticized this faulty metric, Dr. Hoxby switched to reporting the difference in mean squared error (that is, she subtracted in-sample mean squared error from out-of-sample mean squared error) instead of dividing out-of-sample error by in-sample mean squared error. Tr. 1160:21-26 (Hoxby).

206. Any metric purporting to indicate overfit should not involve in-sample error, because in-sample error has nothing to do with overfit—which is fundamentally about out-of-sample error. Tr. 260:19-261:2 (Arcidiacono).

207. As a practical matter, dividing out-of-sample mean squared error by in-sample mean squared error will produce lower values if the model has relatively high in-sample mean squared error, that is, if the model is a bad model. Tr. 260:23-261:2 (Arcidiacono).

208. To illustrate the point, consider a model "that controlled for absolutely nothing." "[I]t would be a really bad model … because it wouldn't be able to predict anything very well." Tr. 261:3-5 (Arcidiacono). "That bad model would predict badly in sample and it would predict badly out of sample, likely equally badly." Tr. 261:6-7 (Arcidiacono). "And that's going to be the model that—according to Doctor Hoxby's metric—would look the best. So that clearly can't be a way of deciding whether the model is overfit." Tr. 261:7-10 (Arcidiacono).

209. Professor Arcidiacono demonstrated the flaws in Dr. Hoxby's overfit methodology by doing something Dr. Hoxby did not do; Professor Arcidiacono employed her methodology on her own models. Tr. 261:18-262:12 (Arcidiacono).

210. From the perspective of out-of-sample error, Dr. Hoxby's additive model 9 is the best of her models. Tr. 263:15-17 (Arcidiacono). It has the lowest out-of-sample error, which means that it would be her best model in terms of out-of-sample predictive accuracy. Tr. 263:22-24: (Arcidiacono). Yet her overfit metric indicates the exact opposite, suggesting that her additive model 9 is the second-most overfit. Tr. 264:11-17 (Arcidiacono).

211.   In addition, Professor Arcidiacono compared his models against Dr. Hoxby's models using her flawed overfit methodology, except for her faulty metric (where she divides out-of-sample error by in-sample error). Tr. 265:4-14, 265:23-24 (Arcidiacono). This showed that Professor Arcidiacono's preferred model is the best model in terms of out-of-sample accuracy and thus the least overfit. Tr. 267:4-5 (Arcidiacono).

212.   At the same time, it demonstrated that Professor Arcidiacono's preferred model (and most of his other models) has an out-of-sample error that is lower than the in-sample error for all of Dr. Hoxby's models. Tr. 267:24-268:5 (Arcidiacono). This shows that Professor Arcidiacono's preferred model "is much better … in terms of forecasting UNC's admissions decisions and is not overfit." Tr. 268:20-23 (Arcidiacono).

213.   Professor Arcidiacono conducted further analysis showing that his models were not overfit. Tr. 268:24-269:1 (Arcidiacono). In particular, he estimated his models on 80% of the data and then tested their out-of-sample predictive accuracy on the set-aside 20% of the data. Tr. 269:3-270:19 (Arcidiacono) (referencing Arcidiacono Demonstrative 56). This analysis demonstrated that his preferred model is "very accurate without being overfit." Tr. 270:20-22 (Arcidiacono).

b.   Imputing Missing Scores.

214.   Dr. Hoxby's criticism of Professor Arcidiacono's method of imputing missing performance scores is unpersuasive and irrelevant.

215.   There are some applicants in the dataset for whom there is no reported GPA or standardized test score in the data produced by UNC. Tr. 280:3-14 (Arcidiacono).

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216.   Both experts impute scores for those applicants, but they use different imputation methods. Tr. 280:15-281:20 (Arcidiacono).

217.   Professor Arcidiacono's method for imputing missing performance scores uses all of the other data in the model to "let the model decide" the missing score for an applicant. Tr. 280:24-281:4 (Arcidiacono).

218.   To do this, he created variables for missing scores and interacted them with race. Tr. 280:15-25 (Arcidiacono). So, for example, he created a variable for missing GPA; and by interacting those variables with race, he allows the model to take race into account in deciding "what GPA to fill in" for the applicant who is otherwise missing a GPA. Tr. 280:15-281:4 (Arcidiacono); *see also* Tr. 177:24-178:23 (Arcidiacono) (doing the same for missing SAT scores).

219.   Dr. Hoxby's method is very similar, but she does not interact her missing score variables with race. Tr. 281:14-15 (Arcidiacono).

220.   Dr. Hoxby's criticism of Professor Arcidiacono's imputation method is not directed at the interaction itself. Tr. 281:16-17 (Arcidiacono). Rather, she objects to the fact that Professor Arcidiacono leaves that interaction "on" when he "turns off" the effect of UNC's racial preferences in his models. Tr. 281:17-20 (Arcidiacono).

221.   This objection would only make sense if there were evidence that racial preferences operate differently for applicants who are missing performance scores in the dataset, but there is "nothing in the record to indicate that." Tr. 281:24-282:2 (Arcidiacono).

222.   In any event, Professor Arcidiacono conducted an analysis showing that missing GPAs do actually vary by race. Tr. 282:25-283:2 (Arcidiacono). His analysis

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compares GPA and missing GPA with UNC's performance rating (which, of course, captures an applicant's GPA). Tr. 283:5-285:2 (Arcidiacono).

223. This analysis showed that non-URM applicants have higher performance scores both when they have a reported GPA in the data and when they do not. Tr. 284:2-285:2 (Arcidiacono) (referencing Arcidiacono Demonstrative 60).

224. Further, Professor Arcidiacono analyzed two alternative methods of imputing missing performance scores, one of which did not involve the use of race at all. Tr. 285:3-286:7 (Arcidiacono). He then conducted an analysis to determine whether these alternative imputation methods affect the magnitude of UNC's racial preferences. Tr. 286:19-20 (Arcidiacono).

225. The results of this analysis showed that the method of imputing missing performance scores has very little effect on the predicted probabilities of admission and thus very little effect on the magnitude of UNC's racial preferences. Tr. 287:6-290:20 (Arcidiacono) (referencing Arcidiacono Demonstrative 61). In other words, the alternative methods of imputing missing performance scores "don't matter for estimating the effect of race" on UNC's admissions decisions. Tr. 290:22-24. That is, this issue is entirely irrelevant to the expert analysis in this case.

c. Inclusion of UNC's ratings.

226. Dr. Hoxby criticizes Professor Arcidiacono for including UNC's ratings in his models. She claims that because they are determined within the process itself, then they should be excluded from the model. Tr. 942:5-12 (Hoxby).

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227.   Whether or not to include certain variables in a model depends at least in part on the goal of the modeling. "[I]f you're trying to figure out how formulaic UNC's admissions [process] is, then you need to include all the components of the formula," and the ratings are certainly part of that formula. Tr. 291:10-16 (Arcidiacono).

228.   For the purposes of determining the magnitude of racial preferences, you might not want to include variables that if racial preferences operate through them. Tr. 291:10-16 (Arcidiacono). It is undisputed that UNC considers race in scoring applicants on the five ratings, *supra* ¶¶23-24, so there is reason to remove the ratings from the model in order to determine the magnitude of UNC's racial preferences.

229.   However, including the ratings would only make UNC's racial preferences "appear smaller than they really are." Tr. 291:24-292:2. In other words, Professor Arcidiacono's inclusion of UNC's ratings means that he is "actually being conservative" in estimating the magnitude of UNC's racial preferences. Tr. 292:1-3.

V.   The Availability of Race-Neutral Alternatives

A. Examination of Race-Neutral Alternatives

230.   In 2003, the Supreme Court held that universities may not employ racial preferences unless they have first engaged in "serious, good faith consideration of workable race-neutral alternatives." *Grutter v. Bollinger*, 539 U.S. 306, 339 (2003).

231.   Despite this obligation, by November 2014 (when this suit was filed), the sum total of UNC's efforts—in the 11 years since *Grutter*—were (1) a 2007 excel "spreadsheet" in which Farmer calculated UNC's class if the admissions process operated "mechanically" based on certain factors, Tr. 661:19-664:3 (Farmer); (2) a 2010 "literature review," in which

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Jennifer Kretchmar reviewed academic papers on race-neutral alternatives but performed no analysis of whether such alternatives were feasible at UNC, PX26, UNC104748 (explaining the research was "dated" in 2014); (3) a 2012 top-ten-percent analysis Kretchmar conducted for UNC's amicus brief in *Fisher I*, PX007, UNC0080085-86; (4) an ad hoc "working group" on race-neutral alternatives that met for the first time in December 2013 (and met only four additional times between then and February 2016 when it was disbanded), PX023, UNC0079625; PX036, UNC0326127-32; Polk Dep. 272:24-275:4, and (5) an October 2014 rough "draft" of a report from Jennifer Kretchmar that contained "preliminary results" of her findings on race-neutral alternatives for the working group, PX029, UNC0099558-60. UNC formed a new race-neutral-alternatives committee in 2016; as of June 30, 2017 (the close of fact discovery), however, that committee had yet to produce any final conclusions. PX004, Admission 14; Polk Dep. 300:5-20.

232.   A year after the close of fact discovery, UNC produced an interim report from the committee; in that report, the committee noted that some academic literature "cast[s] doubt on the utility of race-neutral strategies as complete substitutes for overt considerations of race" but recommended that it should conduct its own simulations of race-neutral strategies because "the outcomes of race-neutral admission strategies vary depending on the circumstances surrounding the particular universit[y]." Tr. 841:8-14, 842:18-21 (Panter). The committee, however, has never actually conducted any simulations of race-neutral alternatives. Kosorok Dep. 42:6-8, 43:20-44:1, 44:15-20; Curran Dep. 20:6-13, 44:4-8; Tr. 857:5-15 (Panter).

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233. SFFA retained Richard Kahlenberg—a senior fellow at The Century Foundation—to do what UNC was supposed to do: examine whether UNC could implement race-neutral strategies that could achieve the educational benefits of diversity. Tr. 390:25-391:12 (Kahlenberg).

234. Kahlenberg graduated from Harvard College in 1985 and from Harvard Law School in 1989. Tr. 392:3-6 (Kahlenberg). After graduating from Harvard, Kahlenberg served as a professor of constitutional law at George Washington University and an academic for the Center for National Policy in Washington D.C, before joining The Century Foundation in 1998. Tr. 392:19-393:18 (Kahlenberg).

235. Kahlenberg has researched and written about affirmative action, education policy, and expanding higher education opportunities for disadvantaged students for nearly three decades. Tr. 392:25-396:3 (Kahlenberg). He has authored or edited seven books and more than one hundred articles on socioeconomic alternatives to race-based policies and presented at numerous universities, including UNC. *Id.*[8] The College Board sought his expertise when crafting the Adversity Index, "which is a measure of socioeconomic indicators that colleges could use to try to promote both socioeconomic and racial diversity on campus." Tr. 396:13-21 (Kahlenberg).

236. In the Harvard case, the Court recognized that Mr. Kahlenberg "has published works on numerous socioeconomic subjects, including the use of race-neutral alternatives in

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[8] Harvard sociologist William Julius Wilson described Kahlenberg's work as "the most thoughtful and comprehensive analysis of class-based affirmative action that he'd seen," and The Washington Post declared one of his works "the best book of the year." Tr. 395:6-15 (Kahlenberg).

college admissions," and permitted him to testify as an expert on race-neutral alternatives. *Students for Fair Admissions, Inc.*, 397 F. Supp. 3d at 177 n.50.

237. Drawing on his knowledge of the history and study of race-neutral alternatives, Tr. 390:25-396:21 (Kahlenberg), Kahlenberg reviewed UNC's efforts and concluded that UNC failed to consider "several possible race-neutral alternatives that could maintain racial diversity [and] in many cases expand socioeconomic diversity, which together would provide the educational benefits of diversity while maintaining strong academic standards at the same time." Tr. 410:23-411:8 (Kahlenberg). Kahlenberg also evaluated simulations of several race-neutral options using the admissions data provided by UNC. He concluded that these simulations demonstrate that workable race-neutral alternatives exist.

B. UNC Failed to Fully Consider or Implement Numerous Available Race-Neutral Alternatives that Could Achieve the Educational Benefits of Diversity.

238. Kahlenberg outlined extensive empirical evidence and academic research documenting the myriad (and innovative) ways in which colleges and universities like UNC can use race-neutral alternatives to produce the educational benefits of diversity. *See*, *e.g.*, Tr. 402:21-403:9, 449:6-450:4 (Kahlenberg). He found that UNC failed to fully consider or implement numerous workable race-neutral alternatives, including:

- Increasing socioeconomic preferences;

- Increasing financial aid;

- Adopting policies using geographic diversity, including percentage plans and the use of zip codes and Census tract data;

- Reducing or eliminating preferences for legacies;

- Reducing or eliminating preferences for children of faculty and staff;

- Eliminating Early Action;

- Increasing recruitment efforts;

- Increasing admission of community college transfers; and

- Developing partnerships with disadvantaged high schools.

Tr. 425:23-426:22 (Kahlenberg) (socioeconomic preferences); Tr. 500:7-12 (Kahlenberg) (financial aid); Tr. 438:10-443:7 (Kahlenberg) (percentage plans); Tr. 415:20-417:13 (Kahlenberg) (eliminating legacy, children of faculty, early action); Tr. 453:2-22 (Kahlenberg) (recruitment); Tr. 453:23-455:4 (Kahlenberg) (community college transfers); Tr. 430:22-435:9 (Kahlenberg) (disadvantaged high schools).

239. Kahlenberg also found that UNC failed to conduct a "baseline analysis of how important race is to the current UNC admissions process" and failed to define critical mass to establish an appropriate benchmark against which to evaluate UNC's use of race and consideration of race-neutral alternatives.[9] Tr. 405:19-408:23 (Kahlenberg). He explained that UNC improperly utilized an overly strict standard by rejecting race-neutral alternatives

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[9] *See supra* ¶¶92-93 (UNC analyzed the effect of gender, legacy, admissions cycle (early vs. regular), and standardized test scores on admissions decisions, but never the effect of race—despite having a model that would permit it to do so).

that do not precisely "maintain or increase" current levels of "racial diversity" and "academic quality." *Id.*

C. Kahlenberg Demonstrated Through Various Simulations that UNC Has Available and Workable Race-Neutral Alternatives.

240.   Kahlenberg evaluated numerous simulations of race-neutral strategies to determine whether UNC has workable race-neutral alternatives available to it. The simulations he considered included the use of various socioeconomic preferences and percentage plans. Some simulations focused only on applicants to UNC (based on admissions data UNC produced in this case) because doing so allows consideration of UNC's ratings. Others also considered a broader possible applicant pool (*i.e.*, students who did not apply to UNC or "non-applicants") because these students might be motivated to apply under a new admissions policy.

241.   Several of these simulations demonstrate that UNC has available and workable alternatives (including Simulations 3, 8, 9, 11, and 13 identified in Kahlenberg's report). Tr. 423:23-443:12 (Kahlenberg). Likewise, Dr. Hoxby's 750/20% socioeconomic preference provided a workable alternative. Tr. 443:13-448:13 (Kahlenberg). As explained more fully below, Mr. Kahlenberg found each one of these six simulations to be workable race-neutral alternatives.

242.   **Simulation 3.** Simulation 3 is an SES-based, race-neutral alternative that employs UNC's admissions process and its ratings and "turn[s] off" the preferences for race, legacy, and early action. Tr. 424:8-425:8 (Kahlenberg). In addition, Mr. Kahlenberg "turned off the existing boosts that UNC gives to [FGC] students" and fee waiver applicants because

he didn't want to "double count" for socioeconomic status in applying his own SES preference. Tr. 424:8-425:8 (Kahlenberg).

243. For Simulation 3, Mr. Kahlenberg applied two SES-related preferences: one "for living in a socioeconomically disadvantaged neighborhood" and another "for being from [a] socioeconomically disadvantaged famil[y]." Tr. 426:5-22 (Kahlenberg). Mr. Kahlenberg gave these preferences a magnitude equal to the legacy preference that UNC affords to out-of-state legacy applicants. Tr. 427:15-19 (Kahlenberg).

244. Simulation 3 yielded racial diversity "roughly comparable to the racial and ethnic diversity achieved under the status quo," "expanded socioeconomic diversity," and the "academic characteristics [of the admitted class] remain quite strong." Tr. 429:2-6 ("[T]he African American share and the Hispanic share are roughly comparable to what they are today."); Tr. 429:9-16 ("[T]he share of students coming from disadvantaged families increases from 20 percent to 32 percent, and the share from disadvantaged neighborhoods also increases markedly."); Tr. 429:19-25 (Kahlenberg) ("[T]he average SAT is 1320, just 15 points different than the status quo. … High school GPA remains quite high at 4.69.") (referencing Kahlenberg Demonstrative 13).

245. **Simulation 13**. Simulation 13 is "the same as Simulation 3" but with an additional SES "preference to students who come from socioeconomically disadvantaged high schools," Tr. 431:7-10 (Kahlenberg), and it is limited to in-state applicants, Tr. 432:25-433:3 (Kahlenberg).

246. "Racial and ethnic diversity remains strong in this simulation. So African American shares and Hispanic shares are comparable to the current levels of diversity." Tr. 433:21-23 (Kahlenberg) (referencing Kahlenberg Demonstrative 15).

247. In addition, "the educational benefits that derived from socioeconomic diversity are stronger in this stimulation than under the status quo." Tr. 434:21-435:1 (Kahlenberg) ("So we see a rise in disadvantaged families by almost ten percentage points. Disadvantaged neighborhoods have better representation, as do students coming from disadvantaged schools.") (referencing Kahlenberg Demonstrative 15).

248. "[O]nce again the academic characteristics are very strong, very similar in terms of both SAT scores and high school GPA." Tr. 435:4-6 (Kahlenberg) (referencing Kahlenberg Demonstrative 15). Mr. Kahlenberg emphasized that maintaining academic strength "is particularly impressive, given that we're now—we now have a student body that has had to overcome more hurdles in life than under the status quo." Tr. 435:6-9 (Kahlenberg).

249. **Simulation 11.** Simulation 11 is another SES-preference model, with some adjustments. Tr. 435:21-25 (Kahlenberg). First, it includes not only applicants to UNC but also North Carolina students who did not apply to UNC (from an NCERDC database produced in the discovery period). Tr. 436:1-3 (Kahlenberg). Second, because Simulation 11 includes non-UNC applicants, it does not take into account UNC's ratings. Tr. 436:4-5 (Kahlenberg). Third, the magnitude of Mr. Kahlenberg's SES preferences are smaller—each about "one-third as large as the out-of-state legacy boost." Tr. 436:8-17; *see also* Tr. 437:6-13 (Kahlenberg).

250. Simulation 11 would result in "an increase in -- in racial and ethnic diversity." Tr. 437:1 (Kahlenberg). In particular, "African American shares move from 8.5 percent up to 10.4 percent," "Hispanic shares also increase, and the total underrepresented minority population … moves from 16.3 percent to 17.7 percent." Tr. 437:1-5 (Kahlenberg) (referencing Kahlenberg Demonstrative 17).

251. Simulation 11 yields "a substantial increase in socioeconomic diversity," including a 15 percentage-point increase in SES disadvantaged family, a 19 percentage-point increase in disadvantaged neighborhood and an 11 percentage-point increase in disadvantaged school. Tr. 437:16-20 (Kahlenberg) (referencing Kahlenberg Demonstrative 17).

252. Simulation 11 yields strong academic characteristics. In particular, high school GPA increases, and SAT scores remain within "a couple percentage points" of the status quo. Tr. 437:24-438:4 (Kahlenberg) (referencing Kahlenberg Demonstrative 17).

253. **Simulation 8**. Simulation 8 is a percentage-plan model. Tr. 438:14-19 (Kahlenberg). But instead of a percentage plan based on class rank (like the University of Texas), Simulation 8 takes the top 4.5% of applicants from each North Carolina high school, as scored on UNC's ratings. Tr. 438:17-25 (Kahlenberg). Because this would not fill the entire incoming admitted class, Mr. Kahlenberg rounded out Simulation 11 by taking the top remaining applicants as scored on UNC's ratings. Tr. 439:8-18 (Kahlenberg).

254. Under Simulation 8, "racial diversity remains quite strong. African American shares increase by a percentage point; Hispanic shares stay steady; and the overall combined

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underrepresented minority shares remain … identical to the status quo." Tr. 440:12-16 (Kahlenberg) (referencing Kahlenberg Demonstrative 19).

255. Under Simulation 8, "socioeconomic diversity increases in all three respects: Disadvantaged family, disadvantaged neighborhood, and disadvantaged school." Tr. 440:20-22 (Kahlenberg) (referencing Kahlenberg Demonstrative 19).

256. Academic qualifications are strong under Simulation 8. SAT scores "remain quite high, within a couple percentage points of the SAT of this current class, and high school GPA remains strong as well." Tr. 441:1-3 (Kahlenberg) (referencing Kahlenberg Demonstrative 19).

257. **Simulation 9.** Simulation 9 is similar to Simulation 8, but it includes North Carolina students who did not apply to UNC. Tr. 441:14-15 (Kahlenberg). It thus does not employ UNC's ratings. Tr. 441:15-17 (Kahlenberg). Although modeled after Simulation 8, Simulation 9 takes only the top 4% from each high school. Tr. 441:13-14, 21-22 (Kahlenberg). Much like Simulation 8, Simulation 9 does not fill the entire class; 25% of the class is filled by the top students without regard to high school. Tr. 441:21-25 (Kahlenberg).

258. Under Simulation 9, "African American shares hold steady; Hispanic shares also are roughly comparable, as are the combined underrepresented minority shares." Tr. 442:7-9 (Kahlenberg) (referencing Kahlenberg Demonstrative 21).

259. Under Simulation 9, SES diversity remains about the same overall: "[s]lightly fewer disadvantaged families, disadvantaged neighborhoods about the same, but we do see an increase … in disadvantaged school[s]." Tr. 443:3-7 (Kahlenberg) (referencing Kahlenberg Demonstrative 21).

260. "Academic characteristics remain very strong. The SAT scores are roughly comparable; and high school GPA, which UNC says it values even more [than SAT scores], goes up." Tr. 443:10-12 (Kahlenberg) (referencing Kahlenberg Demonstrative 21).

261. **Modified Hoxby 750/20% socioeconomic preference.** Under Dr. Hoxby's 750/20% Simulation, "she sets aside 750 seats in the class for disadvantaged admits and defines disadvantaged as the lowest 20 percent using a complex formula that includes family, neighborhood, and school SES." Tr. 444:1-4 (Kahlenberg).

262. But Mr. Kahlenberg, unlike Dr. Hoxby, filled the remainder of the class. Tr. 444:7-9 (Kahlenberg). Mr. Kahlenberg did so with the most academically qualified students remaining, using GPA and SAT (equally weighted) for in-North Carolina public high school students in the NCERDC database. Tr. 444:25-445:4 (Kahlenberg).

263. Mr. Kahlenberg concluded that Dr. Hoxby's 750/20% Simulation is a workable race-neutral alternative. Tr. 443:17-24 (Kahlenberg).

264. Under Dr. Hoxby's 750/20% Simulation, "African American shares remained comparable; the Hispanic shares increase; and the combined underrepresented minority admits hold … steady." Tr. 445:13-15 (Kahlenberg) (referencing Kahlenberg Demonstrative 23).

265. SES diversity also increases under Dr. Hoxby's 750/20% Simulation. Tr. 445:19 (Kahlenberg) (referencing Kahlenberg Demonstrative 23).

266. And "[a]cademic characteristics remain quite strong with respect to both SAT and high school GPA." Tr. 447:24-25 (Kahlenberg) (referencing Kahlenberg Demonstrative

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23). In particular, there is "a two-percentile-point decline in SATs, and the GPA remains very high at 4.63." Tr. 448:2-3 (Kahlenberg) (referencing Kahlenberg Demonstrative 23).

D. UNC's Experts Do Not Contest Kahlenberg's Conclusion that Workable Race-Neutral Alternatives are Available to UNC.

267.   UNC's experts never opined on whether any particular race-neutral strategy is workable and available. Professors Mitchell Chang and Bridget Long offered no opinions regarding the workability of any particular race-neutral strategies—in their reports, at deposition, or at trial. Tr. 448:21-449:5 (Kahlenberg); Tr. 1222-14:1223:12 (Long) ("not offering an opinion as to the impact of any potential race-neutral alternative at UNC"); Chang Dep. 13:14-20, 14:12-21. Dr. Hoxby discussed SFFA's various race-neutral alternatives and created her own simulations of race-neutral strategies. She rejects them all— but only for failing to meet or exceed both UNC's actual levels of URM enrollment and standardized test scores. She takes no position on whether any particular race-neutral alternative is workable and available to UNC.

268.   Hoxby's reports sometimes read as if she were rejecting particular strategies as not workable. *E.g.*, Tr. 1036:19-1042:23 (Hoxby) ("No workable race blind alternative exists for UNC."). Yet, upon questioning, she backtracked, clarifying that she meant only that "there is no race-blind alternative in which I predicted that UNC could achieve its actuals," that is, its actual level of URM representation and standardized test scores. Tr. 1042:4-6 (Hoxby); see also Tr. 1042:18-19 ("I found no race-blind alternative meets UNC's actuals."). As Hoxby explained, whether any race-neutral alternative was "workable" was outside the scope of her "assignment." Tr. 1039:12-1041:4 (Hoxby).

269.   Dr. Hoxby's assignment was more limited; her job was to "evaluate each alternative relative to what UNC attains actually now under its current plan" to determine whether any particular race neutral alternative could achieve UNC's "actuals" in terms of URM representation and standardized test scores. Tr. 1040:6-12, 1042:5-6 (Hoxby). Hoxby never considered, much less reported, how any race-neutral alternative might affect socioeconomic diversity. Tr. 1063:13-1064:10 (Hoxby). That, too, was outside her assignment. Tr. 1064:7-10 (Hoxby).

270.   Indeed, Dr. Hoxby's assignment did not include considering any kind of diversity other than racial diversity. Tr. 1063:18-20 (Hoxby) ("considering the benefits of diversity beyond racial diversity" was "not in [her] assignment); Tr. 1064:7-1065:17 (Hoxby) (analyzing how her race-neutral alternatives would advance socioeconomic diversity "was not in [her] assignment").

PROPOSED CONCLUSIONS OF LAW

I.   SFFA HAS STANDING.

271.   This Court has already held that SFFA has associational standing under *Hunt v. Washington State Apple Advertising Comm'n*, 432 U.S. 333 (1977), because "at least one of [SFFA's] Standing Members would have standing to sue on their own," "the instant lawsuit which seeks to end [UNC's] alleged racial discrimination in its admission process is aligned with, and furthers, SFFA's stated purpose," and SFFA only "seeks declaratory and injunctive relief, [which] would not require individual participation by its members." Doc. 150 at 2-16 (citations and quotations omitted).

272. The Court previously explained that its decision on SFFA's standing "continue[s] to govern" "in subsequent stages in this case" under the "law of the case" doctrine. Doc. 190 at 10 n.9.

273. SFFA thus has standing to maintain this action.

II. UNC'S USE OF RACE VIOLATES STRICT SCRUTINY.

274. Strict scrutiny applies "to any admissions program using racial categories or classifications." *Fisher v. University of Texas at Austin*, 570 U.S. 297, 310 (2013) ("*Fisher I*"); *Eisenberg ex rel. Eisenberg v. Montgomery Cty. Public Schools*, 197 F.3d 123, 128-29 (4th Cir. 1999).

275. Under strict scrutiny, "racial 'classifications are constitutional only if they are narrowly tailored to further compelling governmental interests.'" *Fisher I*, 570 U.S. at 310 (quoting *Grutter*, 539 U.S. at 326). UNC cannot shoulder that heavy burden.

276. First, UNC does not use race merely as an individualized "plus" factor to achieve the educational benefits of diversity. Second, it is unnecessary for UNC to use race to enroll a diverse student body.

A. UNC Does Not Use Race Merely as an Individualized "Plus" Factor to Achieve the "Educational Benefits of Diversity."

277. UNC must show "that its plan is narrowly tailored to achieve the only interest [the Supreme] Court has approved in this context: the benefits of a student body diversity that 'encompasses a ... broader array of qualifications and characteristics of which racial or ethnic origin is but a single though important element.'" *Fisher I*, 570 U.S. at 314-15.

278. Accordingly, UNC may use race only to enroll a "critical mass of underrepresented minority students ... so as to realize the educational benefits of a diverse student body." *Grutter*, 539 U.S. at 318.

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279.   Even then, race may only be a "plus" factor in a system "that consider[s] the overall individual contribution of each candidate." *Fisher I*, 570 U.S. at 305. UNC is violating both preconditions.

> **1.   UNC's Use of Race Is Not Narrowly Tailored to Enroll a "Critical Mass" of Underrepresented Minorities in order to Secure the "Educational Benefits of Diversity."**

280.   UNC claims to use race in admissions in order to enroll a "critical mass" of URMs so it may secure the "educational benefits of diversity."

281.   Ordinarily, a university's explanation for *why* it uses race—*i.e.*, that it truly believes in the "goal of diversity"—is considered an "academic judgment" to which courts give some measure of deference. *Fisher v. Univ. of Texas at Austin*, 136 S. Ct. 2198, 2208 (2016).

282.   Here, though, there is reason not to. UNC has shown no interest in creating an environment where URMs will thrive academically. There is powerful evidence that URM students (and URM males in particular) struggle academically compared to their peers. PX112, UNC0236941; PX104 UNC0124112-13. The record evidence also reveals a significant gap in graduation rates. PX112, UNC0236940; PX104, UNC0124112-13; PX105, UNC0326479. A UNC official characterized these achievement gaps as a "crisis" in "the current state of male students of color." PX103, UNC0109850.

283.   But instead of focusing on admitting URM applicants who are equipped to succeed academically, UNC focuses on diversity at the most superficial level. *Fisher I*, 570 U.S. at 331-334 (Thomas, J., concurring).

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284. Regardless, UNC is owed no deference regarding *how* it pursues critical mass. *Fisher I*, 570 U.S. at 311. "The University"—not SFFA—"must prove that the means chosen ... to attain diversity are narrowly tailored to that goal." *Id.*

285. An assertion "writ large" that UNC is pursuing critical mass thus "is insufficient" to meet narrowly tailoring. *Fisher II*, 136 S. Ct. at 2211. UNC must articulate a definition of "critical mass"—*i.e.*, it must identify the conditions under which it will have achieved the educational benefits of student body diversity—with some precision.

286. UNC's "goals cannot be elusory or amorphous—they must be sufficiently measurable to permit judicial scrutiny of the policies adopted to reach them." *Id.* Otherwise, its use of race has no "logical end point." *Grutter*, 539 U.S. at 342; *Tuttle v. Arlington Cty. School Bd.*, 195 F.3d 698, 706 (4th Cir. 1999) (requiring a "logical stopping point").

287. UNC has no "measurable" definition of critical mass. Indeed, it has no definition at all. *Supra* ¶¶37-43.

288. UNC officials cannot agree on what critical mass means. Some officials believe that it is, at least in part, a numerical goal. *Supra* ¶40. Yet UNC does not know if its current level of URM enrollment achieves critical mass or, if not, what level would. *Supra* ¶¶38, 42-43.

289. Other officials (including Steve Farmer, the Dean of Admissions) disagree, taking the view that critical mass cannot be defined "in terms of the number" of URMs enrolled. *Supra* ¶¶41-42. Instead, they claim, critical mass must be about achieving a certain campus environment. *Supra* ¶¶41, 42.

290.   But UNC has identified no way to measure when that amorphous goal will be met. *Supra* ¶¶38-43. Some officials even claim that critical mass can never be measured. *Supra* ¶¶37, 41, 43.

291.   None of this is surprising, though, given that UNC has not studied the issue. As one official explained: "In all my conversations with Steve Farmer, [critical mass] has never come up. No one has directed anybody to achieve a critical mass, and I'm not even sure we would know what it is." Dean Dep. 144:22-145:5.

292.   UNC's definition of critical mass could not be more elusory or amorphous. For this reason alone, UNC fails strict scrutiny.

2.   UNC Mechanically Uses Race as Far More Than a "Plus" Factor.

293.   For race to be a "plus" factor, it may not be a "predominant factor" in the decision to admit URMs. *Grutter*, 539 U.S. at 320.

294.   UNC instead must use race in a manner that is "flexible enough to ensure that each applicant is evaluated as an individual and not in a way that makes an applicant's race or ethnicity the defining feature of his or her application." *Id.* at 337.

295.   UNC violates this narrow-tailoring requirement in both respects. Its racial preferences are massive. And UNC uses race in a non-individualized, highly formulaic manner.

296.   There are a number of ways to look at the admissions data, all leading to the same conclusion: race is anything but "a 'factor of a factor of a factor'" in UNC's admissions system. *Fisher II*, 136 S. Ct. at 2207.

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297. UNC's racial preferences account for "a fourth of admissions for in-state Hispanic applicants" and "nearly 42% of African-American in-state admissions." Tr. 234:13-14 (Arcidiacono). That is a massive racial preference for in-state URM applicants.

298. To illustrate the magnitude of UNC's racial preferences another way, consider a male, in-state, non-FGC white applicant with a 25% chance of admission. His chances would increase to nearly 71% if treated as a Hispanic applicant. Tr. 216:8-17 (Arcidiacono). If he were instead treated as an African-American applicant, his admission chances would increase to more than 92%. Tr. 216:8-17 (Arcidiacono). In other words, these hypothetical non-URM applicants who are highly likely to be rejected *would be transformed into highly likely admits if they were treated as URMs, and all other characteristics stayed the same.*

299. Professor Arcidiacono's admitted URM analysis further illustrates the magnitude of UNC's racial preferences. For in-state applicants, if racial preferences were removed, the average probability of admission for Hispanic admits would drop to 75.8%. *Supra* ¶160. And the average probability of admission for in-state African-American admits would drop to 57.8%, a 42.2 percentage point decrease. *Supra* ¶161.

300. All told, UNC's racial preferences account for more than 1,100 additional seats for in-state URMs over the full six-year period, or nearly 200 per year.

301. UNC's racial preferences are even greater when it comes to out-of-state applicants.

302. UNC's racial preferences account for 70% of out-of-state Hispanic admissions, Tr. 235:14-15 (Arcidiacono); and 91% of out-of-state African-American admissions. Tr. 232:15-25; 235:1-9 (Arcidiacono).

303. Consider again, the male, non-FGC white applicant with a 25% chance of admission, but this time in the out-of-state pool. He would see his "probability of admission … increase to more than 87% had he been treated like an out-of-state Hispanic applicant and more than 99%—granting him "virtual[ly] certain" admission—had he been treated like an out-of-state African-American applicant." Tr. 220:9-22 (Arcidiacono). Simply changing this hypothetical Asian-American applicant's race to either Hispanic or African-American, in other words, would transform him from an unlikely admit to an almost certain admit. *Id.*

304. Again, Professor Arcidiacono's admitted URM analysis further confirms that UNC's racial preferences dominate admissions for URM applicants, particularly for out-of-state applicants. If racial preferences were removed, the average probability of admission for out-of-state Hispanic admits would drop to 29.2% and the average probability of admission for out-of-state African-American admits would drop to 8.7%, a 91.3 percentage point decrease. *Supra* ¶¶162-63. In other words, without racial preferences, out-of-state URMs who were actually admitted to UNC would be highly likely rejects.

305. All told, UNC's racial preferences account for more than 2,500 additional seats for out-of-state URMs over the full six-year period, or more than 400 per year. *Supra* ¶166.

306. This is the definition of an admissions system that makes race the predominant consideration for URM applicants. Race is not a "plus" factor that has a marginal effect on their admission chances. The data conclusively demonstrates that race plays a "tremendous role in the admissions process," especially for out-of-state applicants. Tr. 115:4-6 (Arcidiacono).

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307.   Indeed, race so completely overwhelms other considerations that it even predominates under UNC's own analysis. Using Dr. Hoxby's flawed models, over 40% of Hispanic admissions and over 50% of African-American admissions still are attributable to racial preferences. Tr. 235:20-237:15 (Arcidiacono).

308.   The Supreme Court has held that a racial preference accounting for "one-fifth of the points needed to guarantee admission," was not narrowly tailored because it effectively made race "decisive for virtually every minimally qualified underrepresented minority applicant." *Gratz v. Bollinger*, 539 U.S. 244, 270, 272 (2003) (citation omitted). If anything, the racial preference UNC grants to URM applicants is even larger.

309.   But race does not just predominate over other factors in UNC's admissions system—it does so in a mechanical and inflexible way.

310.   In fact, UNC's use of race is functionally no different than the "mechanized" system that the Supreme Court condemned in *Gratz*. *Id.* at 276 (O'Connor, J., concurring). There, the University of Michigan gave "every underrepresented minority applicant the same, automatic 20-point bonus without consideration of the particular background, experiences, or qualities of each individual applicant." *Id.* at 276-77. As the Supreme Court explained, that Michigan's racial bonus was automatic meant that each applicant did not receive "individualized consideration." *Id.* at 271 (majority opinion).

311.   The swiftness with which UNC's readers process applications is highly mechanical and not consistent with truly individualized consideration. *Supra* ¶¶64-67. Spending a mere ten to twelve minutes to review, evaluate, score, and comment on each 30-plus page application suggests a formulaic review process. *Id.*

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312. Try as it might, UNC cannot hide that its admissions process operates as an implicit formula that does not give individualized attention to race. Professor Arcidiacono's model predicts over 90% of both in-state and out-of-state admission decisions. Tr. 199:24-200:1 (more than 92% for in-state admissions); 206:5-7 (more than 93% for out-of-state admissions) (Arcidiacono).

313. What is particularly striking is Professor Arcidiacono's accuracy with regard to in-state admits (over 91% predictive accuracy). Tr. 200:1-5 (Arcidiacono). Professor Arcidiacono was able to make such accurate predictions here because UNC's undergraduate admissions process is "very formulaic": the "vast majority of applicants in the pool" either have "a very, very high probability of admission or [a] very, very low probability of admission," Tr. 203:3-8 (Arcidiacono), and his model predicts actual admissions decisions "extremely well." Tr. 203:23-204:6; *see also* Tr. 204:23-205:6 (Arcidiacono).

314. Integral to that formula, of course, is the predictable application of racial preferences across the applicant pool. Absent that, the predictions of the model would not line up with real outcomes "extremely well."

315. UNC, in short, is not "considering each particular applicant as an individual, assessing all of the qualities that individual possesses, and in turn, evaluating that individual's ability to contribute to the unique setting of higher education." *Gratz*, 539 U.S. at 271.

316. UNC instead assumes that all the URM applicants will "automatically" make "a specific and identifiable contribution to … diversity" simply because of their race. *Id.* That is flagrantly unconstitutional.

B. It is Unnecessary for UNC to Use Race to Achieve Student Body Diversity.

317. The Fourteenth Amendment "forbids the use even of narrowly drawn racial classifications except as a last resort." *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 519 (1989) (Kennedy, J., concurring in part and concurring in the judgment).

318. To be narrowly tailored, UNC's use of race must be "necessary ... to the accomplishment of [the university's] purpose." *Fisher I*, 570 U.S. at 309. Thus, "strict scrutiny imposes on the university the ultimate burden of demonstrating, before turning to racial classifications, that available, workable race-neutral alternatives do not suffice." *Id.* at 312.

319. Universities are not required to adopt an alternative that "would require a dramatic sacrifice of diversity, the academic quality of all admitted students, or both." *Grutter*, 539 U.S. at 340. But "[i]f a nonracial approach ... could promote the substantial interest about as well and at tolerable administrative expense, then the university may not consider race." *Fisher I*, 570 U.S. at 312 (quotations omitted).

320. UNC has workable racial neutral-alternatives available to it. It is thus both unnecessary and unlawful for UNC to use race in admissions decisions.

321. To begin, UNC has failed to fully consider or implement numerous workable race-neutral alternatives. *Supra* ¶¶237-38.

322. More importantly, SFFA's expert Richard Kahlenberg has demonstrated through simulations of race-neutral strategies that UNC has several race-neutral alternatives available to it that would do at least "about as well" as race in promoting student body diversity; *he* identified 6 different simulations that would work "about as well" (one of which was created by UNC's expert). *Supra* ¶¶240-65.

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323.   They demonstrate that UNC's use of race is unnecessary and, accordingly, unlawful. Some actually do a *better job than race in promoting UNC's diversity interests, while maintaining academic quality*.

324.   Take Kahlenberg's Simulation 11. It involves a multi-faceted socioeconomic preference, includes non-applicants, and takes into account socioeconomic disadvantage at the family, neighborhood, and high school levels. Tr. 435:18-438:4 (Kahlenberg).

325.   This plan would increase URM representation (African American share rising from 8.5% to 10.4% and Hispanic share also increases), while increasing socioeconomic diversity substantially (on all three socioeconomic diversity metrics). *Supra* ¶¶249-50.[10]

326.   And it would do so without a "dramatic sacrifice" in academic quality. *Grutter*, 539 U.S. at 340. In fact, the academic qualifications of the admitted class would remain strong; indeed, they would essentially the same (if not improve); the high-school GPA of the admitted class would rise while the average SAT score would drop slightly. Tr. 437:24-438:4 (referencing Kahlenberg Demonstrative 17).

327.   Moreover, this modest decline of "a couple percentiles" in SAT scores should be considered in light of the "substantial increase in socioeconomic diversity" present in the class," Tr. 437:16-438:1 (Kahlenberg), a point that UNC has acknowledged, Parrish Dep. 207:17-24 ("lower socioeconomic backgrounds" "come[s] into play" when admissions officers evaluate standardized test scores).

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[10] Additional steps would increase both racial and socioeconomic diversity even more. Among other things, UNC could make better use of socioeconomic data, increase financial aid, use geographic data to admit out-of-state applicants, admit more community college transfers, and/or develop partnerships with disadvantaged North Carolina high schools. *See supra* 237-38.

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328. Considered in context, Simulation 11 produces an admitted class with academic qualifications that are equal to or better than the status quo at UNC, with better racial and socioeconomic diversity. This confirms that UNC has a workable race-neutral alternative. Tr. 437:1-5 (Kahlenberg).[11]

329. UNC's experts do not challenge this conclusion. As explained above, *UNC's experts offer no opinion on the workability of any particular race-neutral alternative. Supra* ¶¶266-69.

330. That Kahlenberg's expert opinion stands unrebutted warrants judgment for SFFA on Count II. *Parrish ex rel. Lee v. Cleveland*, 372 F.3d 294, 308-9 n.17 (4th Cir. 2004).

CONCLUSION

For the foregoing reasons, SFFA respectfully requests that the Court grant it summary judgment on all counts.

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[11] Several other race-neutral simulations work about as well as UNC's use of race, whether one decides to use a percentage plan or socioeconomic preferences, and whether one decides to use UNC's subjective ratings in the current applicant pool or to include non-applicants who may apply in the future. For example, Simulation 3 (SES preference that uses current applicants) increases socioeconomic diversity and does about as well on racial diversity and academic qualifications, *supra* ¶¶242-44; Simulation 8 (a percentage plan that uses current applicants) increases both racial and socioeconomic diversity, with only a slight decrease in academic qualifications, *supra* ¶¶253-56; Simulation 9 (a percentage plan that includes nonapplicants) does about as well on racial diversity, increases socioeconomic diversity and yields similar or better academic qualifications, *supra* ¶¶257-60; Simulation 13 (SES preference that uses current applicants) does about as well on racial diversity and academic qualifications, while increasing socioeconomic diversity, *supra* ¶¶245-48, and Dr. Hoxby's 750/20% Simulation [] increases socioeconomic diversity and maintains racial diversity, with only a slight drop in academic qualifications, *supra* ¶¶261-66.

Dated: February 5, 2021   Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I served the foregoing motion via the Court's electronic filing system, pursuant to the Electronic Filing Procedures, on all attorneys of record who have entered an appearance by ECF in this matter.

This the 5th day of February, 2021.

/s/ *Thomas R. McCarthy*
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